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British Transport Directory of Officials

A list of members of the Ministry of Transport, the British Transport Commission, the Railway Executive, the London Transport Executive, the Road Transport Executive, the Docks & Inland Waterways Executive, and the Hotels Executive, together with their principal officers so far as they have been announced

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Industry's Rehabilitation Needs

SIR FREDERICK BAIN, when he addressed the Federation of British Industries on his election as President for the second year, pointed to the disabilities from which British industry was suffering as a result of the shortage of capital equipment. He suggested that the period of Marshall aid should be used primarily for the rehabilitation of our own industry. The Government should adapt its export policy so that industry was allowed to arm itself to meet world competition. He referred also to the development of voluntary action by industry as an alternative to the compulsory methods from which it had suffered since the war. To ensure the correct use of materials, licensing systems had been evolved; to deal with evasion created by licensing restrictions there were authorities to manufacture; to force manufactured goods on to export markets there was purchase tax to restrict home demands and licensing systems tied to export sales. There were price controls to keep prices down, although in some cases they kept prices up by encouraging inefficiency; price control led in turn to high profits by the efficient; to counter this there was profits tax. Each new problem had been met by fresh statutory restrictions leading to still more restrictions to stop the leaks disclosed by the first, and to grapple with evasions.

* * * *

Railway Equipment for Argentina

Sir Montague Eddy, who has recently returned from Argentina, has stated in an interview to *The Financial Times* that Argentina is to continue to buy railway materials from the United Kingdom, and that for this purpose the special commission formed to run the nationally-owned railways is sending Argentine representatives to London. Sir Montague added, however, that Argentina will buy in the best market. He also said that it was hoped to arrange for a number of young Argentine nationals to come to Great Britain for training with British Railways, so as to equip them to take over responsible posts on the Argentine Railways. He described the organisation which has been established to run the railways as both simple and efficient. A special commission has been formed to administer the railways; it consists of the President of the Economic Council, the Minister of Public Works, the Minister of Finance, and President of the Central Bank. An executive committee consisting of the managers of the various lines works under the commission. The railway groups are continuing to function pending further arrangements.

* * * *

British Railway Investments in Chile

The total amount of British capital invested in Chile has been declining for some years, and according to our contemporary, *The South American Journal*, in 1947 further reduction of £3,176,615 to £46,030,511 has to be recorded. On the other hand, there was a slight improvement from 1·7 per cent. to 1·8 per cent. in the average return, although the amount which received no interest payment was practically the same at £10,267,844. The railways in Chile account for £16,354,889 of the total British investment in that country, and last year £274,583, or 1·6 per cent., was received in interest. This compared with £214,245, or 1·3 per cent., for 1946, and the improvement was due almost entirely to the Antofagasta Railway's payment on account of preference arrears. The amount receiving no interest last year was £7,615,344. Last year's average return on the railway group of investments was the best since 1·9 per cent. was received in respect of 1938.

* * * *

Canadian National Railways

The report of the Canadian National Railways for 1947, which was presented to the Canadian House of Commons on April 12, records an unprecedented volume of goods traffic, which, at 86,221,279 tons, was nearly double the tonnage of 1939. Although passenger traffic declined as a whole, there was an increase in holiday travel. Passenger revenues, at $43,017,690, showed a decrease of $7,110,533, while the goods revenues of $342,582,003 were $42,268,804 higher. Gross revenue, at $438,197,980, compared with $400,586,025 in 1946, and was only a fraction below the wartime peak years of 1943 and 1944. Operating expenses, which rose from $357,236,718

to $397,122,607, left a net operating revenue of $41,075,373, as compared with $43,349,307. After payment of taxes, rents and interest, however, there was a net income deficit of $15,885,194. Mr. R. G. Vaughan, Chairman & President, observes in the report that the application for a 30 per cent. rates increase by the Canadian railways amounted, when applied to all classes of traffic, to only half of that granted already in the United States. While the heavy traffic necessarily entailed greater expenditure, the added expense of increased wages, which was not related to additional traffic, had been particularly burdensome. It was the view of the directors that the railways should be compensated by increases in rates over and above any now to be granted to the extent that costs of wages and materials had advanced beyond the levels prevailing at the time when application for the 30 per cent. increase was filed.

* * * *

Summer Travel to Switzerland

Summer travel facilities between Great Britain and Switzerland were discussed by the International Timetable Conference in St. Moritz last month. As from May 8, a new train will run from Calais to Basle *via* Laon and Chaumont, with through carriages for Lucerne (*via* Basle and Olten) and Chur (*via* Basle and Zurich). A relief train will be provided daily during the height of the season between Calais and Belfort (for Delle, Berne, and Interlaken) or Basle. There will again, as last year, be two-day trains between Ostend and Basle, while between June 20 and October 1, two similar trains, with second class Pullman cars, will operate between Brussels and Basle. Improvements will be effected in connections between this country and the Geneva region by the provision of through coaches and sleeping cars between Calais and Brigue, *via* Lausanne. Two British travel agencies were represented at the conference and made arrangements for services to be run on their behalf to and from Lucerne *via* Calais and Ostend. It is probable, also, that there will be a weekly train for travel agency clients between Dieppe and Montreux. The timetable conference was presided over by the Swiss Federal Railways, and was attended by representatives of the Southern Region of British Railways, the French National Railways, Belgian National Railways, Austrian Federal Railways, the Rhaetian Railway, the Lötschberg Railway, and the two travel agencies.

* * * *

Screw Foundation Development

For 35 or more years engineers—especially in India and elsewhere overseas—have been familiar with the screw-pile method of constructing bridge piers and jetties or wharves in deep water, where the river or sea bed is composed of material suitable for piling. To mention but one instance of its application to railway bridging, the South Indian main line between Madras and Dhanushkodi (the ferry terminal for Ceylon) includes eight screw-pile bridges, the best known being that over the Cauvery river at Trichinopoly. This permanent structure was opened for traffic within six months of the beginning of work, although its overall length is 2,000 ft. and its construction involved the use of 58 cylinders; these were screwed to depths of from 50 to 60 ft. into the river bed. The old type of screw-pile has, however, been superseded by the Screwcrete system of foundation (described elsewhere in this issue), which has many advantages over it. The Screwcrete cylinder is capable of supporting a heavy concentrated load by reason of its large helix, and will withstand violent horizontal shocks without any underwater bracing.

* * * *

Mercury-Vapour Lighting for Goods Yards

It is a fortunate combination of circumstances that the demand for better lighting of railway premises is being made at a time when the mercury-vapour lamp is available to provide a higher intensity of illumination with a reduced load on the mains. An installation of these lamps is being made in the Eastern Region goods yard at Kings Cross, where experiments with lighting from clusters of projectors on 60-ft. poles began in 1946. The 400-watt mercury-vapour lamps now being erected throughout the yard provide an intensity of 18,700 lumens, compared with 8,000 lumens from 500-watt tungsten filament lamps, and have a useful life of 3,000 hr. each, against the 1,000 hr. of a tungsten lamp. With a spacing of approximately 300 ft. between the poles, the effect is to give remarkably even illumination of the yard, without those contrasts between brilliant patches of light and dark surrounding shadows to weary and confuse the eye. Each pole supports three lamps, with a ratchet arrangement for raising and lowering them. The electrical equipment is housed in two weatherproof apparatus boxes at the foot of each pole. A useful characteristic of the lighting noticed at a recent demonstration was the clarity with which labels and inscriptions of all kinds could be read.

* * * *

The Winsford Collision, L.M.R.

The collision at Winsford, on the London Midland Region main line, in the early hours of April 17, was attended by a heavy casualty list, and up to the time of writing 24 deaths have been reported. The 5.40 p.m. Glasgow to Crewe express was stopped near Crewe by the pulling of the communication cord and overtaken by the 6.25 postal train, Glasgow to Euston. Curvature of track appears to have interfered with the view, and the destruction done was considerable. Whenever a train is stopped in this manner, the protection afforded by the block telegraph system becomes more than ever necessary, and while it would be improper for us to make any actual comment on the case until the facts are brought out by an official inquiry, we can join in the question that everyone is asking, namely, how did it come about that the postal train entered an occupied section? Much has been made of the fact that the cord was pulled, but it would say little for our working arrangements, or our staffs, if such a circumstance were followed always by imminent danger from an overtaking train.

* * * *

The Herne Hill Collision

The report of Lt.-Colonel G. R. S. Wilson on the collision at Herne Hill on November 6, 1947, which we summarise in this issue, shows that the main facts were not disputed save in one important respect, namely, the colour of the hand signal shown by the fogman. This should have been red, as his electric repeater showed that the home signal was "on," but the fireman who was on the left of the engine, declared it was yellow, and in reply to his driver's inquiry on the point called out "amber," with the result that the train was allowed to coast and over-run the stop indication, which certainly was being shown by the signals themselves. "It was thus," says the report, "one man's word against another's," but Colonel Wilson concludes that the fogman's statements are to be relied on and that his hand signal was misread. This could have occurred very easily, we think, considering all the circumstances obtaining. The happy-go-lucky behaviour revealed by some of the evidence makes far from agreeable reading. Fog is admittedly a very great nuisance at times, but when it obtains, guards need to be more than usually alert, especially at the approach to junctions, and it is to be regretted that too often we read of a failure to rise to the responsibilities of the situation.

* * * *

Distinguishing Distant from Stop Signals

Colonel Wilson, in his report on the Herne Hill accident, draws attention to the rules of the former G.W.R. under which the number of detonators is varied with the class of signal being fog signalled. Until the coming of the duplex detonator, two fog signals were used, as a safeguard against failure, but generally no attempt was made to distinguish between distant and stop signals. At combined signals the red light did duty for both, and the fogman had to call out the conditions obtaining, saying, for example, "home signal off, distant on." We believe that the G.E.R. at one time used three detonators at a stop signal. Like the whole fog signalling system, this arrangement was founded on a wrong principle, as a failure to explode led to a less restrictive condition; but to reverse the arrangement, for obvious reasons, was impracticable. We should like to see much better fogmen's lamps, possibly containing a good battery and fitted to throw a really powerful light, and perhaps arranged to be switched on by being held in the hand, as an economy measure. It will be interesting to see, in view of Colonel Wilson's remarks, whether the right-hand drive now will be abandoned on the Western Region, where it has reigned uninterruptedly hitherto.

The Coal Situation

ON April 13, the fifth day of the debate on the national economic position, Mr. Gaitskell, Minister of Fuel & Power, told the House of Commons that "no unprejudiced observer can deny that one of the most remarkable developments in the past year has been the recovery in our coal situation." In support of this complacent statement, the Minister quoted the output of coal in the 22 weeks of the past winter as 88·4 million tons, compared with 81·6 million tons during the winter of 1946-47. The increase of 8½ per cent. was rather above the target set for this year, which represented an increase of 14 or 15 million tons on the 1947 output. The Minister spoke of the expected increase in 1948 as being the biggest improvement in output since 1934, but did not state that under private enterprise production advanced year by year from 207 million tons in 1933 to 241 million in 1937, an improvement of 16 per cent.

Colonel Lancaster, M.P. for Fylde, followed Mr. Gaitskell in the debate, and pointed out that in 1947 production of coal went up by only 4 per cent., while costs were increased by 39 per cent. The costs of coal impinged on the whole of our economic life. "The railways," he continued, "are affected in three main particulars. First, the price of their motive power. I am afraid that, owing to the unsatisfactory condition of the coal now being produced, the amount of rubbish which they have to transport up and down the country may amount to some six million or seven million tons in 1947. On top of that is the amount of coal which, owing to our relatively low level of production, has to be transported from export districts inland, with the consequent increase in ton-miles."

Colonel Lancaster's remarks in the main confirmed views we have expressed in previous articles on the subject of coal supply for railway locomotives. All the Minister had to say about the quality of coal was that difficulties would not be overcome until increased plant, including new washeries, had been built. He evaded the question of costs. The outlook for large consumers of coal is anything but promising, and to speak of the National Coal Board having brought about "a recovery in our coal situation" is merely a forensic flourish. In spite of the high prices charged by the Coal Board for indifferent fuel, it seems probable that its operations in 1947 were conducted at a heavy loss.

* * * *

The Worker's Pleasures

AT the present time, when efforts are being made to arrest inflation by putting a stop on both price and wage increases, a good deal of interest attaches to the manner in which the earnings of the lower income groups are dispersed. In so far as the main items of expenditure are subject to taxation, it is clear that there is a link between the taxation policy of the Chancellor of the Exchequer and wages claims on industry.

Professor F. Zweig, who was Professor of Political Economy at Cracow and was in England during the war as Economic Adviser to the Polish Government in London, has undertaken a survey of "secondary poverty," which is an economic term for describing being poor by spending money wastefully. He has incorporated the results of his researches in a book* which recently was reviewed at some length in *The Manchester Guardian*. His survey is based on some 400 personal conversations with persons earning between £4 10s. and £6 gross a week. He found that most men earning about £5 a week said that they gave £3 to their wives for housekeeping and kept the rest themselves; men with £6 said that they gave their wives £4. "Housekeeping" money was supposed to cover rent, light and heat, food at home, school meals for children, and all clothes for wife and children. "Pocket money" kept by the wage-earner went on fares, food out, clothes, cigarettes, drink, amusements, and everything else. Where there were savings, a man and his wife commonly saved separately, but Professor Zweig was told frequently it was not worth while to save.

Some quite extraordinary figures were disclosed to the Professor of the proportions of income which were expended on smoking, drink, and gambling. His survey was written before the increase last year in the price of cigarettes from 2s. 4d. to 3s. 4d. for 20, but he discovered men were spending 32s. 8d. on smoking out of a total income of £5. He found that a common assessment of the cost of smoking was about 15s. a week. On this basis, and assuming that the man's wife was also a smoker, it is probably not uncommon at the present price of tobacco for at least half of a working wage of £5 to be spent on smoking.

The drink bill of a regular beer drinker may easily be 30s. a week, and Professor Zweig mentioned single men who spent 70 per cent. of their earnings on drink. Interest in football pools, dog racing, and other gambling varies, but 3s. a week is stated to be a common outlay on pools, although some spend over £2 a week.

With expenditures at these rates on smoking, drinking, and gambling there can be no margin among the lower income groups for ordinary recreational expenditure. Travel, holidays, and so forth are cut out in favour of the day-to-day spending on items which have come to be regarded as necessities.

These tendencies are of importance to Governments, trades unions, and employers, for with so large a proportion of personal incomes being expended in these ways their influence on wages claims cannot be overlooked. The recent increased taxation on tobacco, drink, and on some forms of gambling, will be reflected directly in many family budgets, more particularly among the lowest income groups where, because they do not attract income tax, no relief will be obtained as a result of the concessions made in the last Budget. But, if the ordinary man came anywhere near to being "reasonable" in his way of living, there would be nowadays few cases of hardship among the labouring classes.

* Labour, Life and Poverty," by F. Zweig. Gollancz. Price 7s. 6d.

* * * *

Salaries under Socialism

MR. SHINWELL, who, although Secretary of State for War, occasionally makes statements rather outside his immediate sphere of responsibility, recently suggested that the salaries paid in many posts in the nationalised industries were too high. He added that the time would come when people who expected positions of authority would have to be prepared to operate on salaries "regarded as reasonable and no more." He was referring in particular to Coal Board salaries, but in view of his political position as Chairman of the Labour Party, his statement may well reflect an opinion of wider application. It is possible, for example, that within the Labour Party there is criticism of the remuneration of members of the British Transport Commission or of the Railway Executive. Indeed there has been some evidence of this in questions which have been asked from time to time in the House of Commons.

It may be that Mr. Shinwell and many of his fellows, would regard the £5,000 a year paid to Cabinet Ministers as a reasonable ceiling. On the other hand, it may be questioned whether such an annual salary is a sufficient reward for the highest posts in a large-scale commercial enterprise. This is particularly the case at the present time, when gross income bears so little true relation to the net earnings after taxation.

In the case of the nationalised railways, the peak salaries now being paid are generally well below those which obtained under private enterprise, notwithstanding the fact that the problems and responsibilities of administration have been multiplied by the bringing together of the four main-line railways under one head. Apart from the Chairman of the British Transport Commission, whose salary is £8,500, the full-time members receive £5,000 apiece. In the case of the Railway Executive, the Chairman receives £7,000 and the full-time members again are on the £5,000 level. Only in the case of the Chairman is the remuneration payable commensurate with that received by a general manager before nationalisation; for the other members it is no more than the salaries received by some of the chief departmental officers before the war when the value of money and the incidence of taxation left £5,000 a year as a handsome rate of pay. It is true to say, therefore, that already there has been a severe pruning of the nominal salaries paid to the principal administrators of the transport industry while the real value of these salaries has been reduced drastically.

The decision to pay £5,000 a year to members of the Railway

Executive practically converts that figure into a ceiling for the salary ambitions of railway officers, few of whom can hope to secure promotion to membership of that select body. In the past a considerable number of senior railway officers received salaries round about the £4,500 to £5,000 mark. Almost inevitably these rates of pay will be cut when vacancies occur. For example, the old companies did not think £5,000 an excessive figure for a chief officer in control of various departmental officers drawing salaries varying from £2,000 to £3,500. If, as is rumoured, the position of Chief Regional Officer is to carry a maximum salary of £3,000, or even less, in future, the status of the departmental officers will have to be reduced in proportion. Now these departmental officers carry heavy direct responsibilities and must take quick decisions without waiting to consult higher authority. There is no fair comparson between their work and the duties of civil servants who do not control actual operations and spend their days in passing the onus of decision to the next rank in the hierarchy.

If it should prove to be the policy under socialisation for salaries generally to be adjusted downwards to the extent we have indicated, it can hardly be expected that the nationalised undertakings will attract enterprising and ambitious entrants into their service. Although, in present circumstances, the prospect of the receipt of a high salary is largely offset by the knowledge that a great part of it will be deducted for taxation, nevertheless, human nature tends towards optimism and the hope that taxation may, at some distant future, be reduced. If, however, the financial attractions of service in a socialised industry are pitched low, the result can be only that the general standard of ability of the personnel will be correspondingly reduced. The tendency will be for the more capable and ambitious young men to turn increasingly to whatever forms of private enterprise may be left, and in this connection it should not be overlooked that, despite recent measures, the great bulk of the trade and industry of this country is still conducted by private enterprise.

The "disincentives" to initiative, thrift and enterprise which have marked the socialist regime, suggest strongly that the policy being adopted is of levelling down rather than levelling up. The outcome from a national point of view cannot be other than deplorable. The present high rates of taxation and the recently introduced capital levy penalise the thrifty while putting a premium on speculation, the improvident dispersal of capital, or the retention of cash rather than its employment in productive enterprise. If it is part of Government policy to place a ceiling on earnings already much reduced in real value by high prices which, to a large extent, have their origin in Governmental expenditure, the reiterated calls for additional savings will ring even more hollow than they have for some time.

* * * *

British Railways Traffic Receipts

THERE is a real danger that the four-weekly returns of "receipts from railway working," issued by the British Transport Commission, may give a wrong impression of the financial state of our nationalised system. For the first 12 weeks of 1948, as reported in *The Railway Gazette* of April 9, the returns show an increase of £16,747,000, or nearly 30 per cent., over the corresponding period of 1947. A footnote to the returns pointed out that the comparison was affected by increases in fares, rates, and charges introduced at different dates during 1947, but it was not explained that last year the fuel crisis crippled industry to a lamentable extent in February and March.

The effect of the crisis is evident from the only current traffic statistic published at the time of writing—"wagons forwarded loaded" for the first eight weeks of the year. Particulars are set out below alongside the 1947 and 1946 forwardings, together with the March and April figures for these two years.

WAGONS FORWARDED LOADED

(Weekly average in thousands)

Four-weekly period	1948	1947	1946
January	709	722	728
February	754	645	771
March	—	638	796
April	—	695	795

The table reveals that forwardings in January, 1948, were 1·8 per cent. below 1947 and 2·6 per cent. below 1946. In February last, forwardings were 17 per cent. over 1947, but 2·2 per cent. below 1946. It seems clear that a somewhat similar position existed in March. All that the recent increase in receipts signifies is the absence of an economic crisis in the first quarter of this year.

What really matters is net revenue, but the Commission has not given an inkling of the relative levels of operating expenditure in 1948 and 1947. The practice of the railway companies was to submit four-weekly statements of receipts, expenditure and net revenue to their directors. No doubt on the expenditure side a good deal of estimating was involved, but adjustments could be made easily in later returns. For administrative purposes, the Commission and the Railway Executive will require similar details, and there is everything to be said for publishing the figures, as is done by certain State-owned lines overseas and by the vast privately-owned railway system of the United States.

On March 27 our American contemporary, the *Railway Age*, was able to publish the net railway operating income for January of each Class I railway, after taking tax accruals and other outpayments into account. The statement revealed many changes compared with January, 1947—mainly downward. In the same issue the *Railway Age* printed an analysis of U.S.A. wagon loadings for the first 11 weeks of the year, indicating a decline of about 4 per cent. in freight traffic. America knows currently what its railways are doing; we emphatically do not.

Unless the Commission and the Railway Executive between them can arrange to tell the public, at regular intervals, about the trend of operating results, they will run a grave risk of becoming as unpopular as the National Coal Board. Should railway net revenue decline this year to such an extent that a further increase in charges has to be made, there will be an outcry if the people who use the railways continue to be misled by newspaper paragraphs about "Higher Transport Receipts," which seem to point towards a reduction in rates and fares.

The authorities responsible for the railways will help themselves in the long run by circulating information about working results in good time. They cannot win confidence in their management by imitating the obscurantism of the Middle-Eastern traveller, of whom it was said "you may listen to him for ever without learning much in the way of statistics."

* * * *

The Ball and Roller Bearing Industry

THE British ball and roller bearing industry is an example of a trade covering a very wide diversity of individual products which has achieved a considerable measure of unity of direction. The Ball & Roller Bearing Manufacturers' Association represents five undertakings which between them are responsible for over 90 per cent. of the country's production of anti-friction bearings. Immediately before the war the industry employed nearly 12,000 persons; by the end of 1947 they had increased to over 18,000. The total number of bearings delivered to customers had grown from just under 24,000,000 in 1938 to over 40,000,000 in 1947. During the current year deliveries are expected to reach 50,000,000 bearings.

When Mr. F. J. Pascoe, Managing Director of British Timken Limited, presided at a dinner given recently by the Ball & Roller Bearing Manufacturers' Association to a number of industrial correspondents who had been visiting the factories of members of the Association, he claimed that no more modern and up-to-date equipment and no more technical skill and craftsmanship existed anywhere in any anti-friction bearing factory in the world than in the factories of members of the Association. He refuted suggestions that the supply of ball and roller bearings at present constituted a difficult bottleneck in this country's production. He pointed out that a shortage of a very small number of bearings in special circumstances could easily set up a cry of "bottleneck," and that this tended to be exaggerated at a time when bottleneck hunting seemed to be a primary occupation of so many official and unofficial bodies. Some of the complaints of a bottleneck arose from the speed in which bearings were required. Some manufacturers of machine tools, for example, quoted two years' delivery for their product, but expected to get bearings within

two or three months of placing an order. It should be remembered that the industry manufactured many thousand of sizes and to a very large extent used separate sizes of raw material for different sizes of bearings. It could not be sure of obtaining a new size of raw material within a period of less than at least six months.

The total capital expenditure incurred by the five member firms of the Association, or to which they are committed, amounts to just under £4,000,000 and the employed capital in the industry is approximately £12,000,000. All the firms, either through difficulties in obtaining labour or permitted extensions or factory space, are operating in more than one factory. The Ministry of Supply has suggested the setting up of entirely new units in other areas, but the manufacturers are unanimous in their conviction that the essence of competitive and efficient manufacture of anti-friction bearings lies in concentration rather than in dispersal.

* * * *

Canadian Pacific Railway Company

RECORD freight earnings of $250,893,574 were achieved on the Canadian Pacific Railway in 1947, exceeding by $17,775,101 the previous record of 1944. Gross earnings, at $26,090,091, were 8·9 per cent. higher than in the previous year, but $285,115 below 1944, for which year, also, gross receipts were at a record level. Passenger earnings declined by 11·1 per cent., there being a decrease of $6,664,000 in military traffic and a smaller total number of passengers carried. In addition, the average journey was reduced from 136·4 to 113·8 miles, giving a passenger-mileage of 1,665,585,000, or 21·7 per cent. lower than in 1946. The wage increase of 10 cents an hour granted on June 1, 1946, was effective throughout the twelve months for the first time, and contributed approximately $ 6,500,000 to the total increase of $10,916,533 in the wages and salaries bill. Working expenses as a whole increased by $24,040,952, or 8·8 per cent.

The net earnings of $22,892,189 from railway operations showed an increase of $2,049,139, but the report points out that out of each dollar of gross earnings, only 7 cents was realised as net earnings. The 1944 gross earnings were roughly the same as in 1947, but in that year net earnings amounted to $43,159,664, or nearly double the 1947 figure. Some results are compared below:—

	1946	1947
	$	$
Passenger revenue	45,380,645	40,322,874
Goods revenue	218,550,608	250,893,574
Miscellaneous	28,564,575	27,369,471
Gross revenue	292,495,828	318,585,919
Working expenses (including taxes)	271,652,778	295,693,730
Net earnings	20,843,050	22,892,189
Other income	22,779,794	24,788,927
Fixed charges	18,488,113	15,787,174
Net income	25,134,731	31,893,942
Dividends	21,307,682	11,257,682
Balance	3,827,049	20,636,260
	%	%
Operating ratio...	92·87	92·81

Income from sources other than railway operations was the highest recorded in the history of the company, reaching $24,788,927, and being $2,009,133 more than in the previous record year of 1946. Net earnings from hotels were better than in any previous year, and ocean steamship earnings were greater, due principally to the addition of the sixth "Beaver" ship to the company's North Atlantic fleet, and the return to passenger service in July of the *Empress of Canada*. Coastal shipping net earnings declined, however, chiefly due to increased costs of operation, and more than offset the improvement in earnings from the ocean vessels. Dividend income increased by $5,984,263, but earnings from Canadian Pacific Airlines were $956,637 less, and the deficit of the Northern Alberta Railways, half of which is borne by the company, increased by $337,162. The net income of $31,893,942 was $6,759,211 higher than in 1946. Dividends paid out of this income aggregated $21,307,682, totalling 2 per cent. on the preference stock and 5 per cent. on the ordinary stock. It was stated when the second ordinary dividend was declared that payment of the dividend was made possible only by income from sources other than railway operations, continued increases in gross earnings from freight traffic having been offset largely by decreases in passenger traffic, and by increases in wages and the cost of materials and supplies.

Net income of the Minneapolis, St. Paul & Sault Ste. Marie Railway Company was $1,183,000, comparing with $154,188 in the previous year. There was also an increase of $526,685 in net earnings of the Duluth, South Shore & Atlantic Railway Company, which totalled $537,460.

Research into motive power continued during 1947, and led to the decision to operate the service on the Esquimault & Nanaimo Railway, on Vancouver Island, with diesel-electric locomotives. The company's stock of diesel shunters was increased by 13 during 1947, and at the end of the year 55 of these units were proving their effectiveness in yard operations throughout the system. Work was begun on building a hump yard with remotely operated points and retarders in the Montreal area, to consolidate work performed at present in a number of separate yards.

An operating reorganisation which was undertaken during the year set up the Eastern, Prairie, and Pacific operating regions, in place of the previous geographical divisions known as the Eastern and Western Lines. The former Western Lines have been divided between the new Pacific Region, which takes those in British Columbia, and the Prairie Region, comprising those in the extensive grain-producing areas and growing industrial centres of the Prairie Provinces.

* * * *

N.C.C. 1848-1948

THE present month marks the centenary of opening of the first section of what now constitutes the Northern Counties Railway, in Northern Ireland, and the Northern Counties Committee of the Railway Executive has marked the occasion by the production of an admirable 72-page historical brochure, which was prepared for distribution to traders having business relations with the railway, to other transport undertakings, and to the Committee's staff. Copies are not available to the general public.

The idea of establishing a railway from Belfast to Ballymena was proposed as early as 1836, and a share capital of £625,000 was subscribed within two days, but a sudden depression in the money market caused the undertaking to be abandoned. The scheme was revived in 1844, and the Belfast & Ballymena Railway Company incorporated in 1845. Work was begun in the same year by William Dargan, who was the contractor for all the important railways in Ireland, and the first sod was cut near Whitehouse on November 16 of that year by the tenth Viscount Massereene. It is of interest that the twelfth Viscount is Chairman of the Northern Counties Committee, and has contributed a Foreword to the commemorative brochure. Thus has been preserved a family contact throughout the life of the railway, despite the fact that the original company (which changed its name to the Belfast & Northern Counties Railway Company in May, 1860) was acquired outright by the Midland Railway of England in July, 1903, and so passed to the L.M.S.R. and now to the British Transport Commission. It is intended, of course, that it shall be transferred eventually to the Northern Ireland Transport Board, if and when that is constituted by the Ulster Parliament.

The original railway was opened from Belfast to Ballymena on April 11, 1848, and this is the event of which the centenary has just been celebrated. Subsequent extensions took the trunk line through to Londonderry in 1855. The second trunk line, to the Port of Larne, was opened in October, 1862, together with the Larne—Stranraer steamer service, constituting the shortest sea route between Great Britain and Ireland. The remainder of the system consists of branch lines, both on the Irish standard gauge of 5 ft. 3 in. and also on the 3 ft. gauge. Some of the narrow-gauge lines have been closed and taken up, and most of the others are closed to passenger traffic. The locomotive history of the system has been peculiarly interesting, but in the booklet it is indicated only by a series of illustrations. The railway was a pioneer in the introduction of road transport, towards the end of last century, and opened its first motorbus service in April, 1902; these activities were transferred compulsorily to the Northern Ireland Road Transport Board in October, 1935. An interesting feature of the booklet is a folding plate with reproductions of the seals of all the sixteen undertakings directly connected with the N.C.C., finishing with the British Transport Commission.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Coal and Coke Traffic in Rhodesia

The Rhodesia Railways Limited,
Transportation Department,
P.O. Box 602, Bulawayo. April 6

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—With reference to your paragraph on Rhodesia under "Overseas Railway Affairs" of your issue dated February 20, it is pointed out that the decrease during the six months in the coal and coke traffic for the Northern Rhodesia Copper Belt was approximately 31,400 tons, not 84,214 as stated.

Presumably the figure quoted by you included the coal sent to the Union Minière and to the Katanga Railway, but it is rather misleading, as the figure of 84,214 tons shortage appears between two paragraphs relating solely to Northern Rhodesia copper mines.

Yours faithfully,

S. E. L. WEBB
Chief Superintendent

Railway Staff Magazines

The Railway Executive, Eastern Region,
11, Blandford Square,
London, N.W.1. April 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read with great interest the letters on the above subject from Messrs. R. Bell and B. Webb in your March 26 and April 9 issues; and undoubtedly the bulk of any successful railway staff magazine should consist of regional news.

It is to be hoped, however, that any future unified staff magazine dealing with British Railways as a whole will devote a little more attention than has been given in the past to matters of historic railway interest, both by way of text and illustrations.

With regard to the second paragraph of Mr. Webb's letter, I venture to suggest that readers in the Eastern, North Eastern, and L.N.E.R. part of the Scottish Regions will be more interested in the doings of the Gresley Pacifics away from their native metals than London Midland Region readers.

Yours faithfully,

GEORGE DOW
Press Relations Officer

Single-Phase Traction at 50 Cycles

5, Yewlands Crescent,
Fulwood, Preston. April 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was very interested in your editorial paragraph in the issue of March 26 regarding single-phase traction at 50 cycles. Thirty years ago single-phase traction equipment was considered very heavy and cumbersome as compared with d.c. equipment, yet today there are single-phase locomotives considerably lighter than equivalent d.c. machines. What has been very disadvantageous for the single-phase system has been the necessity of providing frequency-changing machinery to get the low frequency which was considered necessary for traction purposes. But using 50-cycle supply, I see no reason why the grid cannot supply traction load direct, this resulting in a very real saving.

With 50-cycle supply at, say, 11,000 volts, there is a choice of several systems of traction, not the least important being a system using a motor-generator set and a type of Ward Leonard control for the d.c. traction motors at a low voltage. With any type of electrical installation, the object surely should be to have high voltage for transmission and low voltage for actual utilisation. With a Ward Leonard system of motor control, locomotives could more easily develop high power at high speed by increasing the voltage to the motors. I was interested to note that this point was raised when Mr. T. Hornbuckle gave his paper to the Diesel Engine Users Association. Moreover, with such a system regenerative braking would be automatic and inherent in the system, and the line would always be receptive.

In a locomotive with four driving motors of, say, 750 h.p. each, I would suggest a motor of 12 poles or even 14. This probably would give a frequency in the armature of about 120 cycles at top vehicle speed, which is perfectly satisfactory. Commutation should not be made more difficult because of this, as I have found commutation difficulties are more concerned wih the commutator peripheral speeds and armature ampère-turns; with more poles, the latter would come down.

The benefit of a 12- or 14-pole design is a much lighter motor, as I believe armature frequency is one of the four factors governing output for a given motor weight. This multipole design is only possible with a low motor voltage, of course, because of volts per bar on the commutator. A voltage of 400 on a 14-pole design would give nice armature factors. Again, with small armature ampère-turns and very little, if any, motor field weakening, no compensating windings would be necessary.

Anyway, with a general reawakening of interest in single-phase for traction supply, I do feel that before any large-scale railway electrification is carried out on main lines at 1,500 or 3,000 volts d.c. the merits of other forms of supply should be looked into. Since the last Government commission made its recommendations over a quarter of a century ago in favour of 1,500 or 3,000 volts d.c., tremendous progress has been made with single-phase equipment and systems—much more than has been made with d.c. equipment.

Yours faithfully,

H. CHARNLEY

British Railways Locomotive Exchanges

101, Leadenhall Street,
London, E.C.3. April 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The experimental exchanges of motive power announced in your journal appear to have gone further already than the official pronouncements.

Some few Saturdays ago an ex-L.B.S.C.R. Atlantic was observed steaming smartly westwards out of Waterloo at the head of a take of Portsmouth electric coaches, the guard of which appeared to be brooding over something.

The reasons for this experiment, and its results, if available, surely would interest many of your readers, apart from

Yours truly,

P. L. WILLS

"British Railways"

"Greystone,"
Rodborough Common,
nr. Stroud, Gloucestershire. April 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was extremely interested in Mr. L. Lawrence's letter of March 19 in the April 9 issue, concerning the lettering and colouring of British Railways locomotives. Why not keep the colour schemes of the railway companies which are in a "majority" in the regions concerned, *i.e.*, Western Region, G.W.R.; Midland Region, L.M.S.R.; and so on, with the design given in Mr. Lawrence's letter in a size standard with the crest and lettering of the railway concerned, in, say, white?

Also, why not apply the same to rolling stock where practicable?

Yours faithfully,

R. CARTWRIGHT

Deterioration of Train Service in the Midlands and Yorkshire

10, Woodhall Place,
Thornbury, Bradford. March 20

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Last September you were kind enough to publish some suggestions on train service improvements between London and the Midlands, with particular reference to those on the former Great Central Section of the then London & North Eastern Railway, and now that Spring has arrived, bringing with it that resurgent spirit which may even cause stirrings in the breasts of those responsible for the compilation of railway timetables, perhaps I may be excused for referring to this subject again and making a plea for some improvement of the facilities discussed then, with the prospect of there being less restriction of passenger service mileage during the coming summer.

There would, in particular, appear to be considerable room for improvement in the connections given from the Midlands to Yorkshire *via* Penistone and the Great Central Line, which at present are very poor and no encouragement to the potential traveller by this route. This is very clearly illustrated by comparison with pre-war days, when two through restaurant car expresses in each direction ran between Marylebone and Bradford, giving an excellent through service between the Midland cities of Leicester and Nottingham, as well as Sheffield, and the West Riding cities of Huddersfield and Bradford. In addition there was a useful through carriage service between Marylebone and Halifax, and another from Bournemouth to Bradford.

Admittedly, there are several through services now running

between Leicester, Nottingham, Sheffield, and Bradford by the Midland route, but with the leisurely finishing stage from Leeds to Bradford (in pre-war days one service, the "Yorkshireman," did run from Sheffield to Bradford direct, *via* Thornhill), the best times by this route are around 1½ hr. in the up direction and between 101 and 115 min. in the down, which appears to allow for recovery time against late running between Leeds and Bradford. These timings compare very poorly with the pre-war best of 75 min. in each direction from Sheffield to Bradford by the Marylebone trains, or with the best time of 80 min. by this route when these trains were restored for a few months in October, 1946.

Quite apart from the obvious present deficiencies of the service from the Midland cities and Sheffield and Bradford, the service given intermediately to Huddersfield and Halifax is even worse, as the traveller to and from these places and the Midlands has the dubious alternatives of the leisured connections given by the Penistone trains, or travel *via* Leeds to use the former Midland Division route. Halifax, certainly, has a daily through carriage service to Kings Cross and another to Euston, in each direction, the latter serving Huddersfield also, but neither of these services is of much use to the traveller to and from the Midlands cities referred to above, which would appear to command sufficient through traffic to warrant reasonable facilities.

Apart from the through services referred to above, and those from Lancashire to Yorkshire, both Halifax and Huddersfield must be two of the worst-served cities of their size in view of their relative proximity to the large Midland centres referred to.

It may, of course, be argued that, with the general and unavoidable worsening of passenger train services, as compared with those given in pre-war days, no more severe hardship has been imposed on travellers by this route than has occurred elsewhere. When, however, one comes to analyse the service now provided by the Penistone line between the Midland cities and Huddersfield and Bradford, conclusive evidence of the poverty of its service and connections is readily apparent. I have tabulated below the present and pre-war fastest times between these points, also Marylebone, together with the relevant station-to-station distances:—

From	To Huddersfield			To Bradford		
	1939	1948	Distance	1939	1948	Distance
	hr. min.	hr. min.	(miles)	hr. min.	hr. min.	(miles)
Sheffield ...	— 45	1 4	26·3	1 15	1 48	38·8
Nottingham ...	1 38	2 31	64·5	2 8	3 28	77·0
Leicester ...	2 4	3 8	87·8	2 34	4 3	100·3
Marylebone ...	4 10	5 19	190·9	4 40	6 27	203·4

The 1939 timings are, of course, those of the through express services from London, whereas those for the present day are for connections made at Penistone. A further point is that the 1939 services used the direct Huddersfield—Bradford line, which now, apparently, has been closed finally in view of the deterioration of Wyke Viaduct, and is three miles shorter than the present shortest route *via* Cleckheaton. This is no serious objection, however, as when the 6.15 p.m. from Marylebone was extended to Bradford in October, 1946, it was routed *via* this line (as also in pre-war days) to make certain conditional stops.

Making full allowance for these two differences favouring the 1939 service, one wonders whether the connections at Penistone need be quite so tedious as they are in many cases at present. In the southbound direction the average wait at Penistone, by nine services which connect to Sheffield and the South, is 34 min., varying from 7 min. in one instance to 62 min. in the case of the connection with the Manchester—Marylebone night train, which, incidentally provides a late evening service from Huddersfield to Sheffield! Even worse, perhaps, is the modest wait of exactly 1 hr. enjoined on passengers from the Huddersfield line wishing to join the afternoon Manchester—Marylebone train, the last from this line to give an evening service to Sheffield, Nottingham, and Leicester. In this particular case, such cavalier treatment seems the harsher when one recalls the almost pre-war service given by the 4.50 p.m. reinstated Marylebone express from Bradford during its brief period of operation in the winter of 1946-47.

In the reverse direction, the Huddersfield connections of the trains from Sheffield and the South are rather better, the average wait for the eight "principal" services being only 18 min. Even so, the waits of 25, 24, and 27 min. respectively for connections from the principal Marylebone—Manchester trains seem more than ample to meet normal exigencies of traffic and weather. The connection from the down "Master Cutler," however, is better, involving a wait of only 10 min. at Penistone; and there seems no valid reason why this should not be sufficient for the purpose, especially as timekeeping on the former Great Central main line still compares very favourably with other trunk routes out of London to the north.

I think the details I have given in this letter point to the present inadequacy of this service, which, whilst not a main trunk route, provides a very useful artery between the Midlands, Sheffield, and the West Riding towns. It is to be hoped that the authorities concerned will be able to restore the Marylebone—Bradford through service, which always has been the backbone of this route's passenger traffic, at an early date, and also give consideration to the possibility of improving existing connections at Penistone.

Whilst the traffic involved may hardly justify the running of complete express formations through to Bradford, there certainly does seem to be a case for the running of through portions on the present Marylebone and Manchester services. It is suggested that these services might well be routed *via* Halifax, certain of them at any rate, to augment the existing poor service from this city.

Another possibility which, one feels, might be well rewarded, would be the running of two or three semi-fast services in each direction daily between Sheffield and Bradford, *via* Halifax, to augment the existing stopping trains, and the Marylebone expresses if these are restored.

Yours faithfully,

GEORGE W. CARPENTER

Railway Officers' Salaries

Enfield. April 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The letter from "B. Just" in your April 2 issue (under the heading, "The Railway Executive"), touches some very sore places in the Eastern Region, where recent appointments have been made at such low starting salaries that, if an officer is over fifty, it will take him all his time to attain the maximum of his post before retirement. Seeing that the recent award provides for special class clerks to achieve maximum at the end of two years, this seems most unfair, and is a purely L.N.E.R. survival.

It is unfortunate that B.R.O.G. (British Railways Officers' Guild) had its teeth drawn by the general managers as a condition of birth, but if they have grown a new set this is something on which they might try them in a big way. They should receive the support of the Executive because, according to a recent lecture by Mr. J. C. L. Train (your issue of March 5), Mr. W. P. Allen not only desires a contented and healthy staff but will "ensure that the wages, salaries, and conditions of service under the Railway Executive are appropriate." Forward please, Mr. Allen, and B.R.O.G.

Yours faithfully,

FAIRPLAY

The London Traffic Problem

45, Redington Road,
Hampstead, N.W.3. April 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—As a member of the London County Council I have read with interest your correspondent's pertinent article of April 2 entitled "The London Traffic Problem." One of his conclusions is that "decanting of population from the central to the outer area of London should cease, unless local employment is provided concurrently with the removal of the workers."

The newsprint shortage nowadays almost entirely precludes the Press from finding space to report the proceedings of the London County Council, however closely they affect millions of people. Your correspondent is probably unaware, therefore, that this vitally important subject of keeping housing and industrial development in step was raised by Mr. John Hare, Conservative leader on the Housing Committee, at a meeting of the L.C.C. as recently as March 9.

Of course, your correspondent is right that industry should develop concurrently with house-building on the new estates on the fringes of London, which are so pressingly needed to relieve the lamentable housing conditions that hundreds of thousands of Londoners are still having to endure. But Government policy unfortunately is rendering this joint growth almost impossible. The procedure which has to be gone through before industrial firms are permitted to settle in the desired neighbourhood is so intricate and dilatory that a gap between the progress of the two types of building is now admitted to be inevitable. Consequently the travelling congestion which your correspondent deplores is bound to occur.

It seems such a short time ago that politicians and others were telling us that this sort of "maladjustment" was something which could not happen if people who believed in "planning" were put in control of our affairs.

Yours faithfully,

HENRY BROOKE

The Scrap Heap

Sitting-room Only

Engineers are working on an idea for double-decker railway coaches, Mr. James Callaghan, Parliamentary Secretary to the Transport Ministry, said last night: "It might not be too comfortable, but it would be better than standing 19 to a compartment in rush hours," he added.—*From the "Daily Express."*

* * *

100 YEARS AGO

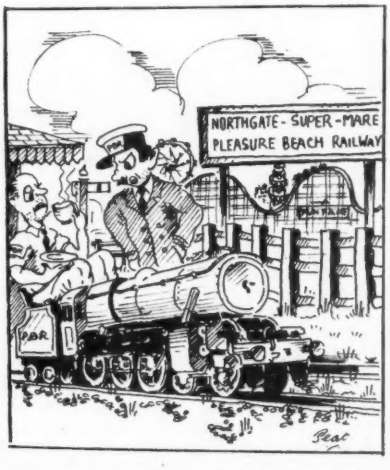
From The Railway Times, *April* 22, 1848

Our readers will gather from our news columns, the tidings of the opinions of the great line of communication between this country and France. We have received no official information upon the subject of the *contretemps* which deprived the friends of the English Directors of the South-Eastern Railway line of the pleasure of witnessing the inauguration. But we have to observe that, as regards the statement of a probable delay in starting the Paris train, and the detention of the Government superintendent, that to our certain knowledge no such delay or detention need have been apprehended, as all who were expecting to enjoy the pleasure of the trip, were assembled in the hall of the terminus at Boulogne, and kept in "durance vile" until the train had started. The affair must be explained. It is not likely that the English party would assume the "actuality" of an arrangement which had no existence, and we are almost inclined to pronounce it as unlikely that the French Directors would withdraw from that arrangement when made.

* * *

Unhappy Landing

While a locomotive was propelling wagons on April 13 on to the lift at Waterloo Station that permits the transfer of rolling stock to and from the Waterloo & City Line, the lift began to sink, taking the train with it. The driver and fireman jumped clear, but the locomotive landed upside down at the bottom of the shaft on top of the four wagons. Services were suspended on the Waterloo & City line from 11.40 a.m. to 1.29 p.m., as the fire in the locomotive was still alight, and there was danger of an explosion.



"For the third time, Jones, we do NOT come under the nationalised scheme!"

C.M.C.

At the Charing Cross Hotel, Strand, London, W.C.2, on April 6, Mr. C. M. Cock, M.I.E.E., M.I.Loco.E., Chief Electrical Engineer to the Railway Executive, British Railways, and formerly Chief Electrical Engineer, Southern Railway, was the principal guest at a dinner given by the officers and assistants of the Electrical Engineer's Department, Southern Region, when he was the recipient of a presentation as a memento of his association with the department. There was a definite electrical flavour about the dishes served,

DIAGRAM OF CONNECTIONS.

MENU

Sole Plate
Avec Sauce Region du Sud

Poulet de Ressort en Fluid R.P.7
Salade Indication Verte
Pommes New Works

Bombe Glacée a Kilfrost Brulée en Court-Circuit
Petits Fours Electriques Sans Cable

Café Mutator Noir

while the designer of the diagram on the back of the menu card, which is reproduced above, showed considerable ingenuity having regard to the initials of Mr. Cock. Further reference to the dinner is made on page 497 of this issue.

* * *

State Paper

The consumption of printing and writing paper for Government purposes represents approximately 10 per cent. of the supplies available.—*President of the Board of Trade, in the House of Commons on April* 15.

* * *

British Railways Signs

On my local line the British Railways have repainted the station signs, using a particularly ugly shape of design and lettering so atrociously debased as to be almost illegible.

Many years ago the railways, and especially the L.N.E.R., engaged noted typographers who devised simple, legible, and wholly admirable lettering to be used throughout the systems—this lettering became world-famous. The L.M.S.R. chose for its station signs an admirably proportioned uniform letter carried out in yellow and black, the combination of colours most readable at a distance.

What stupidity is this which discards all this excellent work and produces the typographical abominations now being sponsored by the British Railways? One says nothing of the waste of manpower and materials in repainting these signs, which were in fact relettered only a very few months ago.—*F. Rowlinson, in a letter in "The Manchester Guardian."*

Motive Power Depot

A witness at a Kilburn inquest said he was employed by the Midland Region of the Railway Executive as senior clerk in the Willesden Motive Power Depot.

The Coroner: What was the old name?

The witness: The L.M.S. used to call it the Willesden loco sheds.

The Coroner: Well, I hope the new names will mean improved conditions.—*From the "Evening Standard."*

* * *

V.I.Ps

Who keeps things "ticking over" amid order or confusion?
It's not the Boss, who sits aloof in sacrosanct seclusion;
It's not his deputy, who issues orders in profusion;
It's not the earnest section chief, respectful to his betters,
But the little office boy who licks the stamps and posts the letters.

Who is it keeps the office sweet, eliminating friction?
It's not the cheerful young cadet, immaculate of diction;
It's not the wayward genius, who baffles all prediction;
It's not the chap who spends his time in snooping round and "sniping,"
But the little girl who makes the tea and does the office typing.

Who is it does the donkey work in running our expresses?
It's not the gifted engineer, who plots the strains and stresses;
It's not the statistician, who his charts and graphs caresses;
It's not the engine driver, nor the wheel-tapper, nor oiler,
But the man who shovels coal and keeps the steam up in the boiler.

Who is it really rules the roost down at the local station?
It's not the stationmaster in his splendid isolation,
Nor foreman, nor collector, though each has our admiration;
It wouldn't be the signalman, the shunter, or the sorter,
But the chap who gets to grips with things—our old friend "Mr. Porter."

Perhaps you think all this is tosh—you really can't agree
There's anything to boast about in folk like you and me!
Yet, while others give the orders, they just *do the work*, you see—
And any boss who knows his stuff, or governor worth the name,
Will underline each word I've said, and tell you just the same. A.B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

CANADA

New Pacific Class in Service

The first of 58 steam locomotives ordered by the Canadian Pacific Railway last year for delivery in 1948 left the shops of the Canadian Locomotive Company on April 6, and was placed in service at once. With certain modifications, the new locomotive, No. 1272, is similar to the previous "G5" class Pacifics, which have given good service with the C.P.R. They are designed for passenger and fast goods working, and No. 1272 is the first of 30 on order with the Canadian Locomotive Company. All are expected to be used in Western Canada. In addition to these Pacific locomotives, the Canadian Pacific has on order several heavier goods locomotives of the Mikado and "Selkirk" classes.

Railway Bridge for Disposal

Among the goods being put on the market by the War Assets Corporation is a complete steel railway bridge 2,380 ft. long, located at Port Nelson, Manitoba, on Hudson Bay. It was erected in 1917 across the Nelson River, where the early plans of the Hudson Bay Railway placed the northern terminal of the line. In 1927, however, the Port Nelson choice was abandoned in favour of Churchill. The bridge is described as comprising 17 steel spans, each approximately 140 ft. in length. Each span is 28 ft. high by 18 ft. wide, centre to centre, with the necessary stringers, trusses, and laterals, and riveted throughout.

The total weight is approximately 2,680 tons. The bridge was fabricated by the Dominion Bridge Company of Montreal.

When the original plans of the Hudson Bay Railway were being put into execution in 1913, it was decided to save 50 miles of construction by switching the terminus from Churchill to Port Nelson, further south on the bay. Work was interrupted by the first world war, and when it was resumed, the engineers encountered difficulties in building a harbour at Nelson owing to shallow water inshore. It was decided to build a bridge to deep water running to an artificial island, which was to be the site of docks, a grain elevator, goods sheds, and the necessary railway connections. The bridge was completed, and the island partly built. In 1927 the Canadian Government asked Sir Frederick Palmer, the British consulting engineer, to make a survey, and he recommended transferring the terminus to Churchill, with its storm-immune harbour and deep water.

UNITED STATES

Pennsylvania Inductive Communications

The inductive train communication system on the Pennsylvania Railroad is being extended to the 104-mile goods line between Columbus and Sandusky, Ohio, at a cost of over $300,000. This will entail the equipment with inductive apparatus of 31 goods locomotives, 28 guards' vans, and 10 signal boxes. When this installation is completed, the Pennsylvania will have 1,181 miles of main-line track equipped with the inductive telephone system, earlier installations having been made on the four-track main line between Harrisburg and Pittsburgh, and on an important branch in New Jersey. The equipment is used for the exchange of messages between trains, between locomotives and guards' vans, and between trains and signal boxes.

Fare Increases Authorised

The Interstate Commerce Commission has authorised 85 western and 11 southern railways to increase their single coach fares from 2·2 cents to approximately 2·5 cents a mile; and their return fares to approximately 2·25 cents a mile in each direction. At the same time, the railways were permitted to raise their minimum single fare from 10 cents to 15 cents, while the western systems were authorised to increase their transcontinental return tickets from 1·716 cents to 1·8316 cents a mile.

N.Y.C. "Pacemaker" Expresses

On February 11 the New York Central inaugurated its new all-coach "Pacemaker" express service between New York and Chicago. All cars on the two trains at present in service have been built by the Budd Company. Each formation includes a new type of observation car, accommodating 10 passengers in the observation section and 43 passengers in the club and lounge sections. The trains are hauled by 4,000-h.p. diesel-electric locomotives.

Erie Radio Installation

More than 300 miles of the Erie main line between Marion, Ohio, and Salamanca, N.Y., are being equipped with a V.H.F. radio telephone system. All main-line diesel-electric locomotives working on the sections concerned will be provided with radio apparatus, and there will be fixed equipment at 14 lineside offices. In addition, it is proposed to use lightweight radio transmitters and receivers for communication between locomotives and brake vans.

ARGENTINA

Co-ordination of Transport Committee

The Argentine Government has set up a technical committee, the terms of reference of which are the co-ordination of all forms of transport within the Argentine Republic, but with the exception of those in the City of Buenos Aires. The composition of the committee and the directives given to it make it evident that a serious attempt is to be made to attain complete harmony in the sphere of transport. Under the presidency of Sr. Miranda (who is empowered to delegate his authority in case of necessity to the Vice-President of the National Economic Council), it will have as permanent members representatives of the Ministry of Finance and of the Central Bank. As part-time members there will be representatives of the Ministry of the Interior (when telegraph, telephone, and radio communications are involved); of the Ministry of Public Works (railways, road transport, and coastal and river shipping); and of the Ministry of Marine (coastal and river shipping). Plenary sessions dealing with co-ordination in general also will be attended by representatives of the Ministries of War and Agriculture, of the Secretariat of Industry and Commerce, and of the Aeronautical Secretariat.

The principal directives given to the committee are as follow: (*a*) To make recommendations as to the economic, financial, and administrative conditions which shall govern the operation and general co-ordination of all forms of transport and communications; (*b*) to recommend the setting up of whatever new controlling organisations may be required, or the modification of existing ones; (*c*) to recommend the manner in which the railways and coastal and river shipping companies—whether owned by the Government or privately—shall fit into the scheme, as also the way in which the value of their property shall be estimated; and (*d*) to effect such valuation in accordance with the method finally to be approved by the Government.

Railway Farms Transferred to Ministry

One result of the acquisition by the Argentine State of the British-owned railways has been the transfer to the Ministry of Agriculture of a number of experimental farms and establishments, the principal among which are those previously run by the Buenos Ayres & Pacific Railway at Rama Caída (Province of Mendoza), and by the Buenos Ayres Great Southern Railway at Bordenave (Province of Buenos Aires), and Cinco Saltos (Territory of Río Negro).

The first-named farm was created for the study of the best methods of growing fruit and tomatoes; the second, of cereals; and the third, of fruit. Research work will continue on the lines followed up to the present.

NEW SOUTH WALES

Quarterly Operating Results

In the three months ended September 30 last, the total earnings of the Department of Railways were £8.388,661, an increase of £760,916. Expenditure rose by £1,107,245 to £7,194,421, giving an operating ratio of 85·76 per cent., as compared with 79·8 per cent. for the corresponding quarter of 1946. The number of passengers and tonnage of goods both increased, the former by 895,177 to 65,471,792; and the latter by 189,551 to 4,537,885 compared with the previous year.

WESTERN AUSTRALIA

Heavy Floods in Path of Cyclone

On Saturday, February 21, a cyclone, which originated off the north-west coast of Western Australia, curved inland, and passing through the inland goldfields districts, caused extensive damage to property and disruption of transport services. Striking the Murchison Railway at Mount Magnet, floods caused severe washaways, and severed communication with the coast.

Passing onward to Kalgoorlie and Boulder, floods swept through these two large inland towns, while other centres in the area were temporarily cut off from rail communications. Both rail and air services were affected. All rail communication with Kalgoorlie was disrupted, a passenger train travelling from Perth to Kalgoorlie being isolated at Bullabulling, while on the Commonwealth Railways two interstate passenger trains and a mixed train were held up at Zanthus, where the railway line was covered with water to a depth of from 2 to 4 ft. for 30 miles.

The Interstate Dock at Kalgoorlie was full of water, and water flowed over the platform and through the station buildings. At Kalgoorlie the total rainfall from

noon on Saturday to 6.30 a.m. on Monday was 1,186 points for the 42 hr.

As is usually the case, however, the damage caused was compensated, to an extent, from the State point of view. The rain which fell was badly needed throughout the pastoral areas, while the replenishment of water supplies over a wide area has relieved a position which, prior to the downpour, was being regarded with increasing anxiety.

BURMA

Myitkyina Line Progress

During February, good progress was made with work on the line north of Wuntho. Bridge repair works have proceeded steadily, and one of the test bores for the new Sittang Bridge was completed. Works on the approach line to the new bridge are in progress.

More Locomotives Arrive

The Burma Railways in February received 23 new locomotives of Class "YB," and 2 of Class "ST." The "YB" locomotives are of the Pacific type and are part of an order for 50 from the Vulcan Foundry Limited in Great Britain. One of them was illustrated in *The Railway Gazette* of November 7, 1947. An illustrated description of the "ST" class 2-6-4 shunting locomotives appeared in *The Railway Gazette* of April 9. The two received in February were part of the order placed with Robert Stephenson & Hawthorns for 28 locomotives of this type.

INDIA & PAKISTAN

British Coal for Pakistan

Pakistan expects to receive 50,000 tons of British coal during the next six months. These increased supplies will enable the railways to run improved services from May 1. An increase in passenger trains is expected between Karachi and Lahore; and Karachi and Quetta. It is hoped also that goods traffic will be moved more speedily.

Workers' Demonstration at Lahore

Workers of the North Western Railway staged a demonstration in front of the saloon of the General Manager of the railway, Mr. F. M. Khan, at Lahore, when he was proceeding to Karachi on tour. The demonstrators expressed indignation over the delay which had taken place in implementing the award of the Pay Commission, which was appointed by the Government of India before partition; and the impending retrenchment of which the General Manager had given a warning earlier. (See *The Railway Gazette* of March 12).

Mr. Khan assured the railwaymen that he was going to Karachi in connection with their grievances, and issued instructions to subordinate officers that no worker should be retrenched until his return to Lahore.

Assam Railway Headquarters

A three-year programme, estimated to cost £2,175,000, has been approved by the Indian Standing Finance Committee for Railways for the provision of office and residential buildings and other equipment for the establishment of headquarters for the now isolated Assam Railway. This is in addition to the £1,687,500 required for the construction of the new links and gauge conversion to connect that railway with the rest of the Indian system (see *The Railway Gazette* of December 12, 1947).

New B.N.R. Mineral Line Surveys

The Bengal-Nagpur Railway is to survey two new broad-gauge lines to serve the Korba and Korar coalfields, 26 and 7 miles long respectively. The new lines will take off from the parent system at Champa and Umaria stations. (Other projects to improve coal transport were reported in *The Railway Gazette* of January 23).

Publications Received

The Electricity Supply Acts. By James W. Chant. London, 1948: Stevens & Sons Limited, 119-120, Chancery Lane. 9¾ in. × 6¼ in. 262 pages. Price 25s.—This handbook is a guide to the electrical supply position under the Electricity Act, 1947, a statement of which occupies the first part. It is followed by the previous Acts, with their amendments, and a section setting out other relevant statutes. The author, in a preliminary historical survey, discusses the progress of legislation since the first Electric Lighting Act of 1882, and states that although in the past the industry has developed under private enterprise and public ownership, there can be no doubt that from the first it has been contemplated by Parliament that it would, as a public service, pass into public ownership. The detailed index adds to the value of this handbook on a subject of topical importance to all concerned in the industry as technicians or administrators.

Indicateur Mondial Chaix (International Traveller's Guide). Paris, 1948: Librairie Chaix, 20, Rue Bergère. 8½ in. × 10 in. 380 pp. Price fr. 300. Issue dated January, 1948.—For a hundred years, ever since railways were built in France, Chaix timetables have proved a useful aid to Continental travellers. Now, to meet transport needs in all countries, the Chaix firm has issued a world guide, planned in a comprehensive and concise style, replete with information concerning travel by rail, air, and sea.

Not the least useful feature of this remarkable guide is a series of 50 maps in blue and white covering the principal countries of the world. Names of towns are printed in clear type, and connecting rail and air lines are numbered for reference to the accompanying timetables.

An index of 40 pages comprises the names of 6,000 towns. The guide ignores the "iron curtain," and in map 17 takes the traveller through Russia in Europe, with timetables numbered 171 to 179 for railways radiating from Moscow. No airlines are shown on this map. The railways and airlines of India are shown in map 40. Maps 35 to 39 deal with the United States and Canada. Pages 8 to 50 of the guide give details of passport and frontier requirements; addresses of railway, airline, steamship and travel agency offices; and other particulars. The Chaix firm plans to publish new editions of the world guide five times a year.

Railways to Cambridge: Actual and Proposed. By Reginald B. Fellows. Locomotion Papers No. 2. South Godstone, Surrey: The Oakwood Press, Tanglewood. 7¼ in. × 4¾ in. 28 pp. + 4 pp. plates. Stiff paper covers. Price 3s.—Canon Fellows has had a special interest in the railways around Cambridge ever since he was resident at Trinity College in 1889-1892. In more recent years he has conducted no mean research into various problems associated with their history. Some of this material has been printed in a private brochure of very limited circulation; some given to the Railway Club in a lecture; and some published in the columns of *The Railway Magazine*. For the first time, the story is collated, and made generally available, and the present booklet is a welcome addition to railway historical literature, by an accurate and painstaking author.

The Story of the West Highland. By George Dow. Second edition. Obtainable from the Advertising Manager, British Railways, Eastern & North Eastern Regions, 26, Pancras Road, London, N.W.1. 8½ in. × 5½ in. 63 pp. + 4 large folding appendices. 65 illustrations. Stiff paper covers. Price 3s. 6d. net (3s. 9½d. including postage).—This is the last publication of the old L.N.E.R. Although a second edition, this is largely a new book, as, for reasons of security, the important wartime rôle of the West Highland line could not be described when the first edition was published in 1944 to commemorate the jubilee of opening. A chapter is devoted to the West Highland in wartime, and much interesting information revealed. There are new gradient profiles of the line, drawings of saloon carriages built at Cowlairs, and a table of locomotives and dimensions. The whole production, on heavy art paper, is an admirable example of the type of detailed official historical and descriptive brochure which Mr. George Dow and the L.N.E.R. made peculiarly their own.

Travel in Canada.—If this brochure is designed to tempt the reader to take a ticket to Canada it succeeds admirably in its object. The comfort and service which the C.P.R. is able to offer, coupled with the fine views to be seen from the windows of its trains, some of which are illustrated here, make a Canadian railway journey a memorable experience. Mention is made of famous trains, such as "The Dominion" and "Number One," but the reader is referred to the timetable for details, leaving the brochure to do its work as an *apéritif*. This is a limited edition, to be followed by a re-issue containing photographs of new rolling stock and probably further details of the "roomette" cars, which are expected to go into service this year.

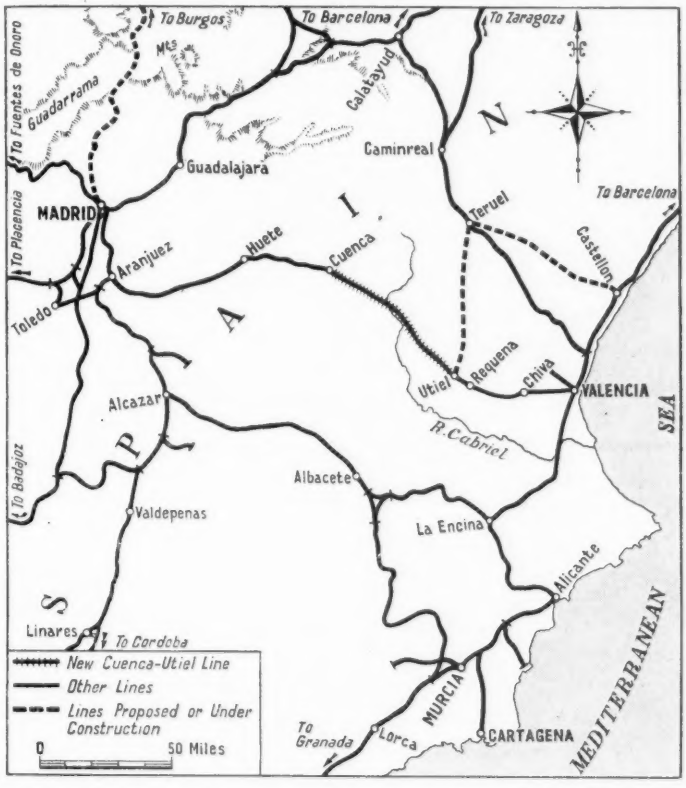
Vulcan Diesel and Electric Locomotives. Published by the Vulcan Foundry Limited, Newton-le-Willows, Lancs. 24 pp. 4 in. × 7 in.—This small brochure covers one electric and five diesel types, and consists of the leading dimensions arranged in tabular form, with the appropriate illustration opposite. The electric locomotive is the large "EF" class for the Great Indian Peninsula Railway; the diesels comprise one diesel-mechanical railcar, three diesel-mechanical shunters, ranging from 150 to 250 h.p., and finally, the large 1,600-h.p. diesel-electric locomotive under construction for the Egyptian State Railways. A sufficiently wide variety of types thus is presented to indicate the scope of the firm's manufacturing capacity in this field.

A New Spanish Main Line

By connecting Cuenca with Utiel, the Madrid-Valencia route has been reduced from 306 to approximately 255 miles and travelling time has been cut to seven hours

IN November last an important project of the Spanish National Railways was completed with the opening of the new line between Cuenca and Utiel, which for the first time brings Valencia within seven hours of Madrid.

When the Spanish main lines were built, the hope of attracting profitable local traffic at the expense of a more direct route through more difficult and less remunerative country was the guiding policy for location. Now the Spanish National Railways are constructing long and costly cut-offs, one of the most important of which is that from Madrid to Burgos across the Guadarrama Mountains, which will shorten considerably the distance between the capital and the French frontier.



Map showing how the new line has shortened the Madrid-Valencia journey, compared to that via La Encina

History of the Project

The south-eastern main line of the former Madrid, Zaragoza & Alicante Railway was a fairly direct route to Alicante, but left the great port of Valencia very much to one side, the distance from Madrid, *via* Albacete and La Encina, being 306 miles, against 183 miles in a straight line. For many years Valencia pressed for a direct line, and at one time even aspired to an entirely new electrified double track. A more practical suggestion, which dates from 1921 and has now been realised, was for a link between the long Madrid-Cuenca and Valencia-Utiel branches, 125 and 55 miles in length respectively.

The new line is approximately seventy miles long and has cost 165 million pesetas. As it traverses very broken country, some striking engineering features are encountered, chief of which are the viaducts across the rivers Narboneta and Cabriel and the Los Palancares and Narboneta tunnels.

The Narboneta Viaduct is named "Torres Quevedo," after the engineer responsible for most of the works on the line. It is 197 ft. above the river and consists of twelve arches of 33-ft. span and eight of spans varying between 108 and 197 ft.; 1,860,000 cu. yd. of concrete were used in its construction, which occupied thirty months. The total length is 2,394 ft.

The Cabriel Viaduct clears the river of that name in one great span of 326 ft., with five small approach arches. The shoring for this and the "Torres Quevedo" Viaduct was of reinforced cement to obviate possible warping and distortion of wooden shoring.

The highest point of the line, 3,714 ft., is at the Los Palancares Tunnel, some 12 miles beyond Cuenca. This is one of the highest tunnels on the Spanish broad-gauge lines. From Los Palancares the tendency is generally falling, with a ruling gradient of 1 in 67. There are no level-crossings and the sharpest curve is of 440-yd. radius.

The 21 tunnels have a total length of 5 miles, 1,485 yd., the longest being Los Palancares (1 mile, 770 yd.), followed by Narboneta (1 mile, 330 yd.). In one section there are five tunnels in succession. One of the smallest tunnels, Olmedilla, was damaged seriously by a landslide and had to be rebuilt and reinforced to render it proof against the recurrence of such a mishap.

Like the Madrid-Cuenca section, the new line is laid with heavy rails to permit passage of the heaviest traffic, but the Valencia-Utiel section has not yet been similarly equipped. For the moment, therefore, through express service is provided by railcars leaving each terminus at 15.30 hours and arriving at their destination at 22.30 hours. In addition there is a mail service daily.

Further Improvements Planned

When the Valencia-Utiel line is relaid, plans will be studied for a deviation between Chiva and Requena to cut out a difficult stretch of line. Another projected cut-off, from Huete to Madrid, will by-pass Aranjuez and further reduce the distance between Madrid and Valencia.

The layout at Utiel Station has been much improved. This station will have added importance when the projected line to Teruel, and possibly Castellon, is completed.

The sleeping-car expresses from Madrid to Valencia will continue to use the old route *via* La Encina, thus assuring a more convenient hour of departure and arrival for night travellers. On this line, however, improvements are planned. There are plans for a direct Valencia-Cartagena service, *via* Alicante and Murcia. At Murcia connection with a through train to Granada would facilitate establishment of a one-day Valencia-Granada service.

Expansive Keys for Concrete Arches

Procedure in reconstruction of Laroche Viaduct

SEVERAL interesting features emerged from the reconstruction of the Laroche Viaduct on the Paris-Lyons main line of the French National Railways, seriously damaged by bombing. This work entailed five 66 ft. concrete arches, 45 ft. wide, and one of its first problems was to reduce the unbalanced thrusts, during reconstruction, on the weakened piers.

The solution adopted in this case was the pouring of two separate rings, 1 ft. 8 in. thick, in sections 6 ft. long. Then, to avoid the subsequent use of hydraulic jacks to free the centring, a key of expanding or expansive concrete was inserted in the first ring of each arch.

This was done by leaving a 3-ft. 10-in. key space in the ordinary concrete throughout the full width of the arch, and lightly reinforcing its edges with $\frac{3}{8}$-in. rods. The space was divided into four sections across the width of the arch by wooden shuttering, and the following mix was then poured into it: 3·4 cu. ft. gravel, 1·06 cu. ft. sand, 1·2 cwt. special expanding cement, and 50 gal. of water. The expanding agent in this cement was sulphoaluminate, and a slag cement was added as a retarder.

While the concrete was still wet, 1-in. holes were made in it at intervals of about 1 ft., and a plaster ridge was raised round its edge. Water was then poured into the holes and over the surface, where it was retained by the ridge, so as to cause the concrete to expand. As a result, a final net expansion of about $\frac{1}{16}$ in. was secured, just sufficient for the purpose. The job was completed by filling the joints with mortar.

Rheostatic and Regenerative Braking—1

Main lines with long and steep gradients are a more suitable field for regenerative systems than suburban routes

By B. J. Prigmore, M.A., A.M.I.E.E.

SINCE the early days of electric traction, "braking on the motors" has been known to be possible. It is accepted practice, as a last resort, to try to stop a train or car by reversing the motors and closing the first-notch circuits; the reversed torque due to the current then flowing through the motors should stop the train. Later, particularly on tramways, arrangements were made to brake on the motors by altering their connections to convert them to dynamos; the electrical energy so obtained was dissipated in resistances, wherein it was converted to heat. This form of braking, still installed on tramcars, is called "rheostatic." A further possibility, having turned the motors into dynamos, was to feed the electrical energy so obtained back to the supply system, thus reducing the net energy consumption of the car. This, known as "regenerative braking," though very attractive, is not in general use owing to the complexities it introduces; for this reason it proves economic only in particular cases.

Consideration of the functions of braking systems gives an indication of the possibilities of rheostatic or regenerative braking in particular circumstances. On suburban services the brakes are used, possibly twenty or more times an hour, to reduce the speed of the train to zero, and the brakes deal with the *kinetic* energy of the train. On mountainous main-line routes a very high proportion of the use of the braking is for the purpose of limiting the speed of the train down long, steep gradients. The ideal brake will hold the train at constant speed, dealing with the *potential* energy which the train is losing (and which must not be converted into kinetic energy lest dangerous speeds be attained). In this latter case, train speed is limited by the continuous rating of the brakes (ordinary brake blocks, for instance, should not be operated above dull red heat!) and the necessity of having sufficient reserve brake power to stop the train.

In suburban service the main advantage of dynamic braking, as "braking on the motors" is often called, is the great reduction in wear on wheels and brake blocks, with consequent reduction in maintenance as well as stores charges for the braking system. A subsidiary advantage is the much reduced formation of brake-block dust, which, settling on the tracks and getting drawn into ventilated motors, tends to aggravate signalling and insulation troubles. If the dynamic braking be regenerative, then some extra advantage may be gained in the reduction of net energy consumption for a given service; this may be up to 20 per cent. in favourable circumstances.

The disadvantages of dynamic braking, especially if it be regenerative, are the extra weight and complexity, hence cost and maintenance requirements, of the train apparatus. This complexity is due to the need for easily-controlled regeneration down to zero speed, with automatic transfer to rheostatic or friction braking should regeneration fail. This might be due to equipment failure, or to inability of the track conductors to receive power (the track usually being non-receptive if the regenerated power on the section fed by a substation exceeds the load power, and the substations are not arranged to receive power); or even because all the collecting shoes of a train leave the live rails whilst the train is regenerating over a complicated junction.

Stability of regeneration also is required; sudden increases in track voltage due to other trains suddenly switching off power should not cause appreciable reduction of regenerative retardation; otherwise a driver on suburban services will not trust regeneration lest he overshoot a station (especially at a terminus), and will not use it.

Train lighting also may be affected by regeneration, for, just as loads cause track voltage drop, so does regeneration cause voltage rise. Over-voltage applied to electric light bulbs appreciably shortens their life, while the use of high-voltage lamps will cause dim lighting when, due to heavy system loads, the track voltage is low. To the regeneration system on a low-voltage line must thus be debited the extra cost of a motor-generator lighting system, or that of a voltage relay which puts extra resistance in the lighting circuit when high voltage occurs, to limit the lighting current.

Lastly, in all forms of dynamic braking, comes consideration of motor size; the use of motors twice rather than once per cycle of suburban train operation means that appreciably larger motors have to be fitted to the train, causing further increase of cost and weight.

These many subsidiary reasons, leading to complexity of equipment, account in the main for the limited application of regeneration to suburban services, despite the seeming attractiveness and simplicity of the elementary means whereby regeneration may be obtained.

On mountainous main-line routes, however, locomotive haulage and high-voltage power supply are generally employed, whilst constant-speed regeneration to deal with potential energy is satisfactory. Train lighting is either from axle-driven dynamos (on through carriages from steam operated lines) or motor generators, so is unaffected by track voltage variation due to the use of regeneration. Some slight variation of braking with track voltage is of little importance, as the braking is not required for stopping the train; for this purpose the friction brakes are used. The fact that the whole of the friction braking is in reserve enables high downhill speeds to be maintained, for the friction brakes, now being in reserve, can stop a train from a higher speed than that at which they can both hold, and still retain ability to stop, the train.

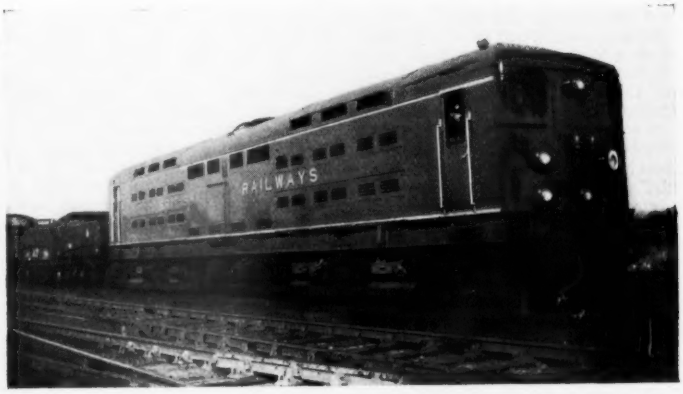
Increased weight and complexity of equipment are of little importance on locomotives, as high adhesive weight is often required, and there are relatively few locomotive equipments compared with those of motor coaches on suburban lines. Since regeneration is not required down to zero speed, the equipments are not very complex, for the braking is controlled by the driver, and little in the way of automatic control relays and equipment is required.

The size of locomotive motors is little affected by their being required for regeneration. They are used, possibly for half-an-hour or more, on ascending the gradient, and prevented by the forced draught ventilation system usually employed on locomotives on this type of service from being overheated by the high currents flowing. In view of this ventilation, there is no point in not using the motors for braking during the descent of the other side of the summit; providing the continuous rating current is not exceeded appreciably during the descent (just as, in general, it will not be exceeded greatly during the ascent) the motors will not be overloaded. For this reason, very little decrease in motor size could be permitted should regenerative braking not be required, since the sustained low-speed haulage needed on ascents is one of the main factors influencing motor size.

It will be seen from these general considerations that only in exceptional cases will regeneration on suburban lines be feasible. On the other hand, where heavy locomotive-hauled trains operate on mountainous routes there is a strong case for regeneration, since the constant-speed conversion of large amounts of potential energy into electrical energy is relatively simple and the total saving to be gained in power, brake blocks, and increased traffic flow may well be appreciable.

(*To be continued*)

Electric Locomotive in British Railways Livery

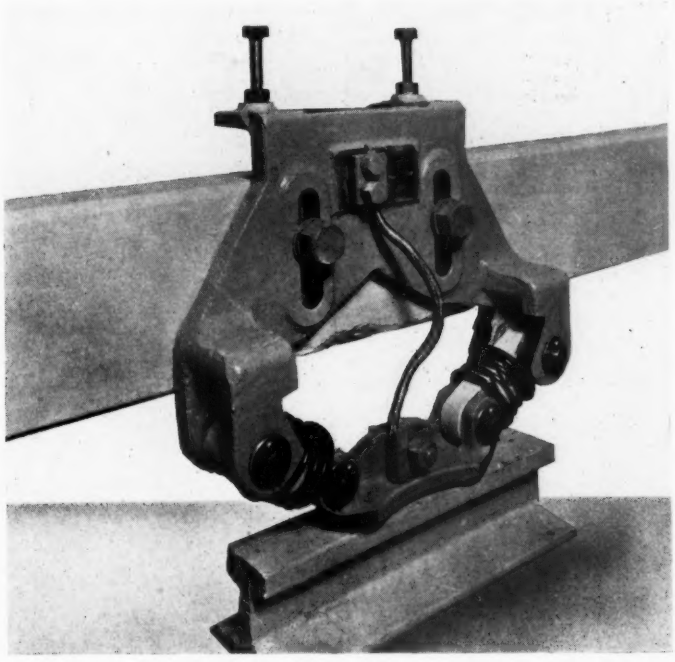


Southern Region locomotive CC2 with new lettering and painted blue

Photo] [H. M. Madgwick

Spring-Controlled Shoegear, London Midland Region

Reduction in weight and simple isolating arrangements of new type on the Euston - Watford services



Shoe in contact with conductor rail

DEVELOPMENTS of spring-controlled shoegear by the London Transport Executive have been illustrated from time to time in these pages (see our issues of December 6, 1946, and April 25, 1947). The following description refers to a simple conversion from gravity to spring control developed by the London Midland Region and on trial on the Euston-Watford electric stock.

In contrast to the rocking link and arm mechanism of the London Transport shoegear, the London Midland shoe is controlled by the springs with its collecting face parallel to the surface of the conductor rail when in contact or when running free, and is extremely simple. It will be seen from the illustrations that each link is threaded through a spring, which is compressed between the shoe bracket and the shoe itself. The shoes are adjusted to hang, when running free, $\frac{1}{8}$ in. below the surface of the conductor rail, and this lift represents a shoe pressure of approximately 35 lb. on the conductor.

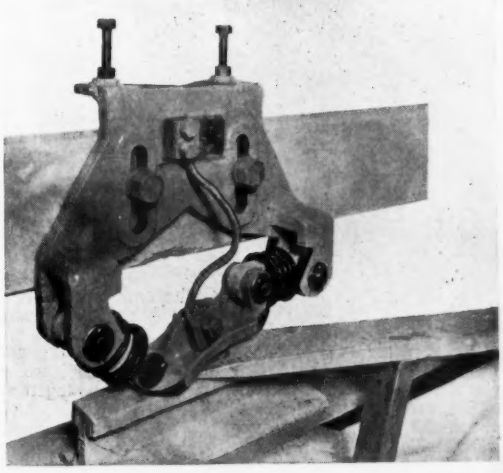
The standard gravity shoe on the Euston-Watford electric stock weighs 28 lb., and it has been found possible to use a shoe of only 12-14 lb. in the new spring-borne design, which can be fitted to the existing brackets with only a very slight modification.

The material used in the prototype has been cast iron, but it is intended to make further tests with shoes of cast steel and malleable iron.

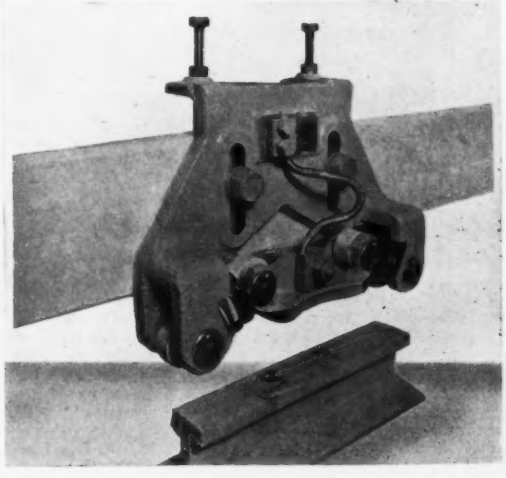
Apart from the very desirable characteristics of such a collector shoe, the design incidentally has another advantage. In the normal way, if a shoe requires to be isolated, that is, prevented from making contact with the conductor rail, it is lifted clear by a wooden paddle and wooden pegs suitably inserted in the links to keep it clear. As an added precaution it may be roped to the shoe beams. With the spring-borne shoe illustrated, the paddle can be used to throw the spring-controlled link over dead centre and so hold the shoe securely in the non-operative position.

Trials made so far show that the design is very satisfactory in service, and should lead not only to reduced maintenance of conductor rail equipment, but also of shoegear.

ELECTRIFICATION ECONOMIES IN THE U.S.S.R.—The electrification of main railway lines in the Soviet Union, begun in 1932 with the conversion of the difficult mountain section between Zestafoni and Stalinissi on the trans-Caucasian line, has been reported to cover 1,073 route-miles. It includes important lines in the Ural region, in Siberia, in the Polar region (the northernmost 25-mile section of the Murmansk Railway), in the trans-Caucasian region, and in the centre of European Russia. It is stated that electric traction on the Zestafoni-Stalinissi section has realised a yearly saving of 10 million roubles in working expenditure, and that the aggregate saving which has resulted so far exceeds by more than three times the capital invested in the conversion of that section. Since electric traction between Zestafoni and Stalinissi replaced the former oil-fired locomotives, some 70,000 metric tons of fuel oil a year have been saved. Moreover, a rearrangement of train working has resulted in an annual saving in electrical energy of 1,500,000 kWh.



Using a paddle to lift shoe off rail and secure it in the out-of-contact position



Having been thrown over dead centre, the shoe remains raised without further adjustment

More British-Built Stock for Brazil

Repeat order for multiple-unit suburban trains for Central Railway services in Rio de Janeiro area

IN our January 2 issue, we illustrated some new electric stock for the Central Railway of Brazil being loaded at Birkenhead Docks. The vehicles formed part of a contract for 30 train units ordered by the Central Railway to supplement 60 units supplied before the war. The electrical equipment has been manufactured by the Metropolitan-Vickers Electrical Co. Ltd., and the coaches themselves were built by the Metropolitan-Cammell Carriage & Wagon Co. Ltd., of Birmingham, as sub-contractor. A full description of the original stock appeared in the *Electric Railway Traction Supplement* to *The Railway Gazette* of March 4, 1938.

Each train unit consists of three coaches, comprising one motor coach in the centre and two driving trailers. Two or three such units can be combined to form longer trains according to traffic needs. The motor coaches are fitted with four 175-h.p. series motors, two being mounted on each bogie. Since the supply is at 3,000 volts d.c., each pair is connected permanently in series, and control is by series or parallel connection of the pairs, with bridge transition.

Four Working Notches

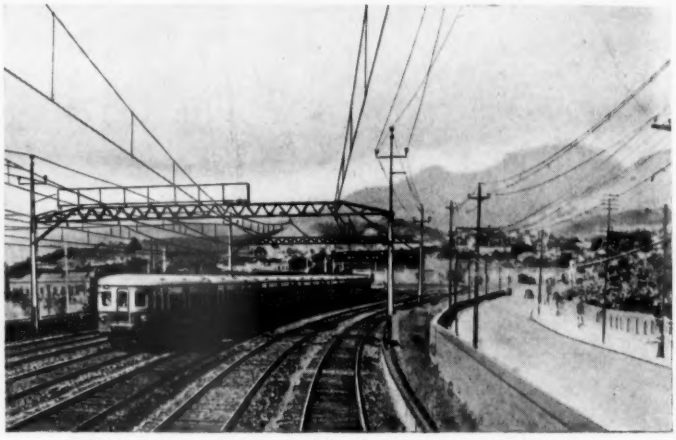
The control equipment provides four working positions both in forward and reverse, namely: (1) shunting notch; (2) full-field series; (3) full-field parallel; and (4) weak-field parallel. Electro-pneumatic contactors are used for short-circuiting the starting resistances, effecting transition from series to parallel connection, and providing the weak-field condition in the full parallel position; as well as for breaking the main current supply.

The motors are of the axle-hung box type, wound with four poles and interpoles. Field reduction is obtained by means of tappings in the main series field coils. Each motor is supported on one side by two bearings on the driving axle, and at the other side by a nose resting in a spring suspension on the bogie frame. The trains run at a maximum speed of 50 m.p.h., and operate with an acceleration of not less than 1·1 m.p.h. per sec. up to a speed of 19 m.p.h., this performance being produced with a line pressure of 2,700 V. With a terminal voltage of 1,350, the one-hour rating of the motors in full field is 175 h.p. at the motor shaft with 106 amp. at 760 r.p.m. With the same terminal voltage and also in full field, the motors are rated continuously for an output at the motor shaft of 145 h.p. with 87 amp. at 825 r.p.m.

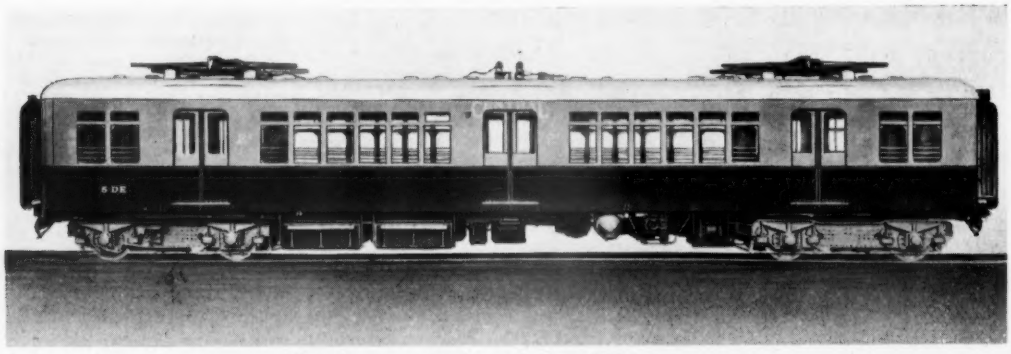
Each motor coach is provided with a 13-kW. motor generator set running off the 3,000 V. supply and producing a low tension output of 100 V., which is used for lighting, electric fans, battery charging, the control and auxiliary circuits, and for driving a motor-compressor.

Composition of Trains

All the coaches are of the open type, and each train unit consists of two second class cars (the motor coach and one trailer) and one first class trailer. The vehicles are equipped with an automatic train stop valve, operated by the signalling equipment and arranged to act directly on the braking so as to stop the train at once and cut off power. Two single-shoe pantographs, with a contact pressure of about 16 lb., are mounted on each motor coach. They are raised by pneumatic power and arranged so that when lowered, they fall rapidly at first and are then slowed down so as to assume a closed position without impact.



Train of two units on Rio de Janeiro suburban line



All-steel motor coach with four 175-h.p. motors

HIGH-SPEED LOCOMOTIVE DESIGN IN FRANCE.—The French Société Alsthom has under development a high-speed electric locomotive with the C-C wheel arrangement, having a 16-*tonne* axle load and a total adhesive weight of 96 *tonnes*. The continuous rating of the locomotive will be 3,300 h.p. The six motors will be fully suspended on the bogies, and will be coupled to the axles through a geared flexible drive. Electro-pneumatic control with 40 notches and 16 running positions will be provided. The motor combinations will be on the double series-parallel system, and weak-field operation will be available. Our contemporary, *Chemins de Fer*, in giving some advance particulars of the machines, says that the body will be mounted on each bogie through two pivots, an arrangement which facilitates equalisation of weight between the axles. This suspension system affords a link between the bogies and the body that permits rotation of the bogies and relative lateral movement between bogies and body, with self-centring characteristics and the suppression of vertical movement. A maximum speed of 93 m.p.h. is envisaged. It is hoped that the new locomotive will be ready for trials on the line this autumn. The control circuits will permit two of the locomotives to be coupled together and operated from one driving cab. Although designed for high speeds, possibly in excess of that quoted, the electrical characteristics of the locomotives will give them a wide range of usefulness, and they may be employed on parcels and goods trains as well as passenger services.

Screwcrete Foundations for Bridges and Piers

Screwed reinforced concrete columns up to 42-in. dia. designed to resist horizontal strains, and loads up to 400 tons

USE of Screwcrete foundations for bridge piers and jetties or wharves, in rivers or on sea coasts with other than rocky beds is referred to in an editorial note in this issue. Deep-water jetties and piers were constructed by this method with extreme rapidity during the war.

The Screwcrete system is particularly suitable for permanent structures, such as railway bridges and steamer piers, when speed in construction is important and where heavy concentrated vertical loads together with horizontal thrusts of considerable magnitude have to be resisted. The most important of such horizontal forces is that due to the berthing of vessels alongside wharves or jetties. In the case of bridge piers, such forces are usually due to wind and current. The Screwcrete cylinder is easily and rapidly sunk in deep water, and can be designed so that it needs no under-water bracing to withstand these horizontal forces. Owing to the large bearing area provided by the helical foot, penetration into the river or sea bed may be comparatively shallow, even when the cylinder has to bear loads of 200 or more tons, which are usual with the largest standard size of Screwcrete cylinder. In fact, when founded in certain types of stratum, a cylinder may carry up to 400 tons as well as resisting the bending moments produced by horizontal thrust.

A further important advantage of the Screwcrete foundation is that transport to the site of heavy piles or cylinders is saved. It is also claimed for this type of foundation that, when used in suitable conditions, it is most economical in cost calculated on the basis of cost per ton of carrying capacity. Even where there is no water, it is sometimes advantageous to use Screwcrete piles to avoid the vibration that would be caused by pile-driving.

Screwcrete Unit Assembly

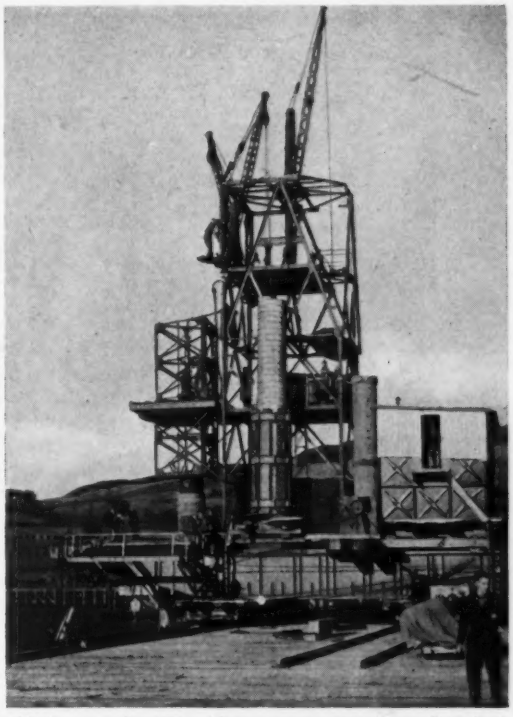
Screwcrete foundations are a development of the older and well-known screw-piling. Each unit comprises a thin cylindrical casing, usually of welded steel sheet, but sometimes of reinforced concrete. The sheeting is generally corrugated to resist external pressure under what may be a considerable head of water. In practice, these light cylinders have proved perfectly water-tight even under 100-ft. head. At its lower end the cylinder is connected to a helix, which in the smaller sizes is of cast iron and in the larger sizes of cast iron, welded mild steel or reinforced concrete.

To transmit the requisite torque to the helix, a specially-designed mandrel is connected to it temporarily. The mandrel is also connected to the cylindrical casing at suitable intervals by means of expanding grips, so that the casing may receive directly sufficient torque to overcome skin friction. The grips also provide support for the casing and facilitate its guiding. The whole assembly is pitched in position and screwed to the necessary depth by means of an electrically-driven screwing plant to which the mandrel is connected. The mandrel is afterwards disconnected from the helix and casing and withdrawn. The casing, however, remains to form the shuttering for a reinforced concrete column subsequently moulded inside it. The casing can be fabricated on site either by special machines, if the job is large enough to warrant their use, or by small hand-worked plant.

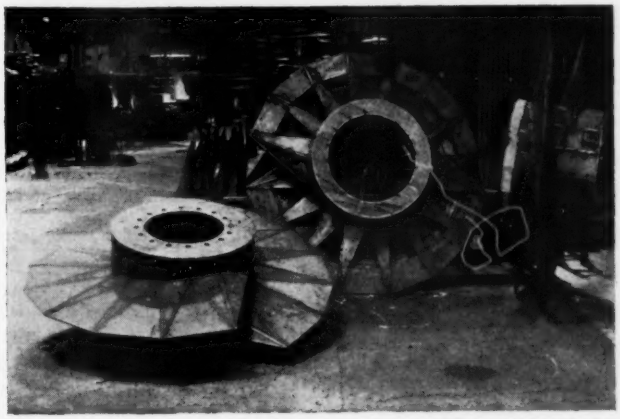
Types and Sizes of Column and Helix

The type of helix used may have a pointed, closed, or open boss, depending on the nature of the subsoil. When it can be used the pointed boss is the most efficient; it may be fitted with hydraulic jets in its point, through which water and compressed air can be forced to loosen the soil beneath it. On the larger sizes of cylinder with open bosses air locks may be fitted to enable obstacles to be removed, foundations to be trimmed and concrete plugs to be placed under compressed air. The depth to which a cylinder has to be screwed can be estimated accurately from a study of boring records and application of the principles of soil mechanics.

To enable mandrel sizes to be standardised. Screwcrete cylinders are of three standard diameters, 42 in., 19 in. and 14 in. With a 42-in. cylinder the helix generally used has a diameter of 8 ft., but in some cases diameters of over 9 ft. have been used. This explains why such heavy loads can be carried by this type of foundation unit. The latest type of Braithwaite screwing machine is designed for use with all sizes of pile and cylinder and enables the torque and speed to be varied to suit local conditions.



Work on the War Department wharf on Gareloch, Dumbartonshire: the cylinder (42-in dia.) on the left is being screwed, the centre one assembled, and a mandrel section is seen on the right



Left: Reinforcement for three 8-ft. concrete helices. Right: Cast-iron helix, 8 ft. in diameter, with concrete boss ready for use at Iskenderun (Alexandretta), Turkey

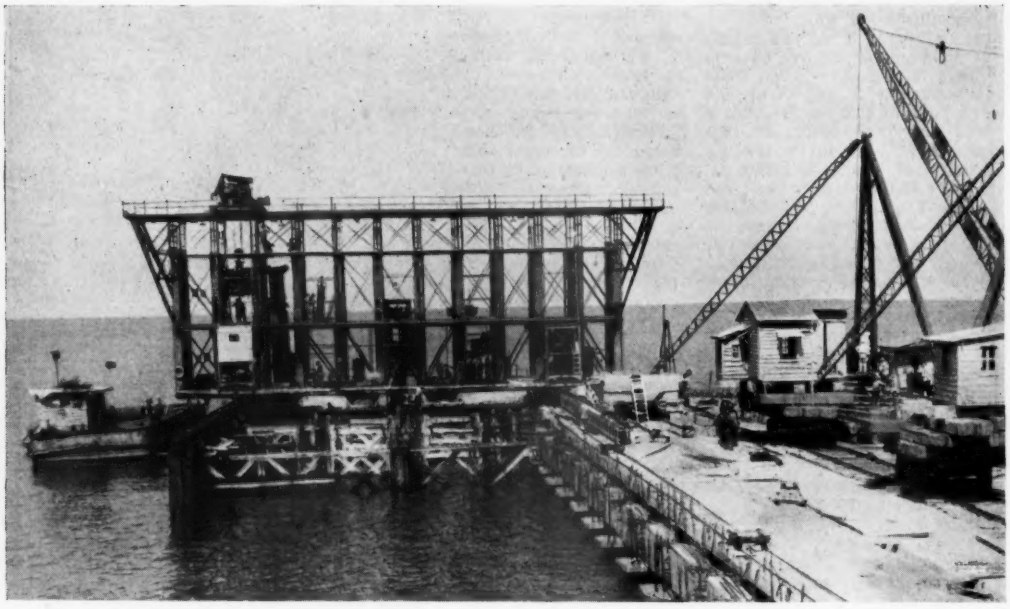
Among recent examples of Screwcrete-founded structures are the deep-water wharf at the military port on Gareloch in Dumbartonshire and at two ports in Turkey. The Gareloch wharf was built during the war to the orders of the Consulting Engineers to the War Office, who selected this type of foundation for the front portion of the wharf, which carries a number of heavy cranes and is subject to severe berthing forces. The cylinders are 42 in. in dia. and have 8-ft. helices. There is no underwater bracing. The latest type of electric screwing machine was used.

Fearing that the Germans might block its northern ports, the Turkish Government decided to develop the small shallow harbour at Iskenderun or Alexandretta, on the gulf of that name, so that deep-draught vessels could be berthed there. Here again speed and capacity caused Screwcrete foundations to be selected for the new pier or deep-water jetty. It covers an area of over 17,000 sq. yd. and has an overall length of 1,650 ft. The maximum width is 150 ft. There is a jetty head carried on 420 42-in. cylinders, and an approach pier with 320 19-in. cylinders. The head is equipped with heavy cranes, and each cylinder with its 8-ft. helix is designed to carry 200 tons. The capping and other superstructure members were precast in reinforced concrete, a method usually favoured by Braithwaite & Company, because this work can go ahead whilst the cylinders are being screwed.

The other Screwcrete jetty built recently in Turkey is at Izmir It has a head 246 ft. long and 62 ft. wide and an approach neck 548 ft. in length. The 42-in. cylinders were sunk through 30 ft. of water to a penetration of 60 ft. into the subsoil. The helices of the central row of cylinders have a dia. of 9 ft. 3 in.; narrow-gauge tracks run on this jetty.

In general, the 42-in. cylinder appears to be suitable for broad-, standard- and other-gauge main-line railway bridges and also for jetties and piers serving ocean-going shipping. For smaller bridges and for all light and narrow-gauge lines and on approach roads where Screwcrete foundations are suitable, the smaller sizes of cylinder or pile may prove adequate. This also applies to lighter jetties and such structures as life-boat slipways.

The design and construction of Screwcrete foundations have been developed by Braithwaite & Co. Engineers Ltd., of Haymarket, London.



Muliple screwing gantry used at Iskenderun

Gants Hill Underground Station Concourse

The largest deep-level structure of its kind in Great Britain has been opened at Gants Hill on the London Transport extension into Essex

THE concourse at Gants Hill Station, on the eastern extension of the London Transport Central Line, was completed at the end of March and opened to the public on April 4. The remainder of the station was completed when the line was opened to Woodford and Newbury Park last December (see our December 19, 1947, issue), but work had been continuing since then on the completion of the concourse.

This concourse runs for a distance of 150 ft. from the foot of the three escalators serving the platforms. It is 20 ft. wide, and the top of its domed ceiling is 20 ft. from platform level. Its construction is an example of engineering skill that will draw visitors interested in tube construction from all over the world.

The ceiling is finished in off-white, lit by strip lighting in silver-coloured holders, and supported by 16 pillars in cream and gold tiling. It is the largest deep level structure of its kind in Great Britain. The difficulty of tunnelling so large a space was overcome by driving a number of small tunnels, and dismantling all but the outside linings, which now form the walls and roof of the concourse.

The concourse has been described as "cathedral-like," and one observer suggests it bears a resemblance to the original Crystal Palace when it was first erected in Hyde Park. The concourse represents a new design in tube stations, giving freer access to the platforms. Gants Hill was chosen as the first example of the new design because of its situation and importance. The station is built beneath a roundabout where heavy traffic routes converge on Eastern Avenue, the main trunk road from London to Southend. The ticket hall lies directly underneath the roundabout, and, as at Piccadilly Circus, is connected by subways and staircases to the surrounding pavements.

While the beauty of the concourse will attract wide attention, it has a strictly utilitarian function—to facilitate the quick dispersal of heavy crowds alighting from trains at the platform. Special waterproof sheeting has been built into the ceiling of the concourse to prevent damp seeping through and disfiguring its surface.

INSTITUTE OF TRAFFIC ADMINISTRATION OFFICERS ELECTED.—At the annual general meeting of the Institute of Traffic Administration, held at the Grand Hotel, Manchester, on April 10, Mr. A. W. Fielder was elected Honorary Treasurer and Mr. C. W. Griffin, Honorary Secretary, for the current year. The following officers were elected at the meeting of the National Council on April 11: Sir Herbert Matthews, President; Mr. E. P. Puttick and Mr. J. A. Dunnage, Vice-Presidents; Mr. R. P. Bowyer, Chairman of the National Council; Messrs. B. E. Walls, W. B. Whaley, and L. C. Harrison, Vice-Chairmen of the National Council.

Gants Hill Underground Station Concourse

View in the concourse looking towards the three escalators

Widely-spaced pillars permit free circulation between concourse and platforms

Official Coaches for H.R.H. Princess Elizabeth

(*See news paragraph on page* 504)

The two coaches to be used by Princess Elizabeth on official journeys

A view of the dining room of the coach, which leads to the lounge

A corner of the lounge

H.R.H. Princess Elizabeth's bedroom

RAILWAY NEWS SECTION

PERSONAL

Sir Frederick Bain has been elected for a second year of office as President of the Federation of British Industries.

We regret to record the death on March 22, in his 86th year, of Mr. W. C. Acfield, O.B.E., who was Signal Superintendent, Derby, L.M.S.R., from 1923 until his retirement in 1927, and had previously been Signal Superintendent, Midland Railway.

Mr. D. M. Hambly, E.D., B.Sc. (Eng.), who was last year appointed Director, Civil Engineering, Railway Department, Government of Pakistan, was born on July 31, 1899. After serving from 1917-19 in the R.N.A.S. and the R.A.F. as a single-seater pilot with the B.E.F. in France, he became a pupil of Mr. W. W. Grierson, then Chief Engineer, Great Western Railway, and at King's College, London, where he obtained the degree of B.Sc. in Engineering with honours in 1921; he was for a period President of the Engineering Society at King's College. In 1921 Mr. Hambly was appointed an Assistant Executive Engineer to the Public Works Department, India, and joined the North Western Railway. Until 1937 he filled various posts as Assistant and Divisional Engineer, in charge of maintenance, construction, track supply, water engineer's and bridge department work, including two years (1928-29) as Executive Engineer in charge of rebuilding tunnels and bridges on the Khyber Railway. From 1937-40 he was Divisional Personnel Officer, and then joined the Army as Railway Bridging Officer, M.E.F. After service as Assistant Director, Construction, in Eritrea, Egypt and Iraq, he was from 1942 Director, Railways, Iraq, until recalled to the North Western Railway, India, in 1943. Until 1946 he was Deputy General Manager, and then Divisional Superintendent at Quetta, and, later, at Karachi. He recently officiated for a short period as Director-General of Railways, Pakistan, while Mr. A. G. Hall was on leave.

Mr. D. M. Hambly

Appointed Director, Civil Engineering, Railway Department, Government of Pakistan

Dr. H. H. Cavendish Fuller has been appointed Chief Medical Consultant to the Railway Executive. Dr. Cavendish Fuller is at present Chief Medical Officer to the Western Region at Paddington Station, and he will continue his duties for the Western Region while acting as Consultant to the Railway Executive.

Mr. William Venner, M.I.Mech.E., M.I.Loco.E., Chief Mechanical Engineer, Sierra Leone Government Railway, who, as recorded in our February 6 issue, has been appointed General Manager, was born on April 30, 1903, and was educated at King Edward VI Grammar School, Southampton, and at University College, Southampton. He served his apprenticeship in the locomotive shops at Eastleigh from 1920 until 1925, under the L.S.W.R., and later the Southern Railway, and during 1926 he studied running shed methods at the Bournemouth depot of that railway. At the end of 1926 he was appointed Assistant Locomotive Superintendent, Gold Coast Government Railway; he was made District Locomotive Superintendent in 1932, and in 1937 became Locomotive Superintendent. He held that position until taking up that of Chief Mechanical Engineer, Sierra Leone Government Railway, in 1940. Mr. Venner is at present on a visit to this country.

Mr. William Venner

Appointed General Manager, Sierra Leone Government Railway

Mr. P. S. Palmer has retired from the position of Deputy Chief Mechanical Engineer, Ceylon Government Railway, and has joined the technical staff of Freeman, Fox & Partners.

Mr. E. C. Taylor has been appointed Payrolls Officer, London Transport. He was Acting Payrolls Officer from November, 1946, subsequent to the retirement of Mr. H. Roberts, Payrolls Officer.

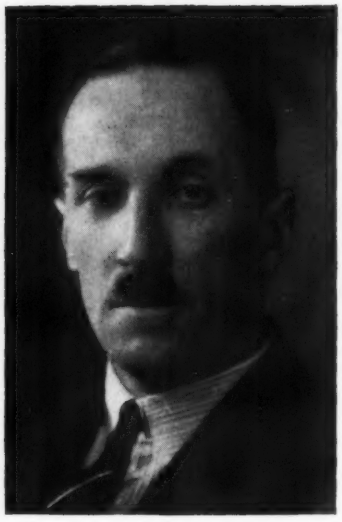
Mr. George Chennell has been appointed Telegraph & Signals Engineer of the Central Argentine Railway. He commenced his career in the Way & Works Department in 1925, transferring to the Telegraph & Signals Department in 1931. In 1937 he was appointed Outdoor Assistant, and, in 1941, Principal Assistant, to the Telegraph & Signals Engineer, and four years later became Assistant Telegraph & Signals Engineer.

Mr. Thomas Clayton Woods, M.C., B.Sc., A.M.I.C.E., A.M.Inst.T., who has been appointed Chief Engineer of the Buenos Ayres & Pacific Railway, received his engineering and technical training at Manchester University and with Beyer, Peacock & Co. Ltd. During the 1914-18 war he served as a Captain in the Royal Engineers and was awarded the Military Cross. In 1921 he joined the Buenos Ayres & Pacific Railway. He was appointed District Engineer in 1937, and was promoted to be Assistant to the Chief Engineer in 1946. In January, 1948, he was appointed Deputy Chief Engineer, and now succeeds Mr. L. Reynolds, who has retired, as Chief Engineer.

Mr. T. C. Woods

Appointed Chief Engineer, Buenos Ayres & Pacific Railway

Mr. Henry Hume Saunders, O.B.E., M.I.Mech.E., M.I.Loco.E., Joint Managing Director of the Vulcan Foundry Limited, who, as recorded in our April 2 issue, has retired from that position on medical advice, and from the board, was born on June 23, 1888, in Monmouthshire, and was educated at Tonbridge School. He served a five years apprenticeship in the Wolverhampton workshops of the Great Western Railway, and in 1913 was appointed Assistant Locomotive Superintendent, Indian State Railways, and joined the North Western Railway. In August, 1915, he proceeded to East Africa with the Indian Expeditionary Force; and in 1917 he was granted a commission in the Royal Engineers as Captain and was transferred to German East Africa. He was made an M.B.E. (Military) in 1917. In 1920 Mr. Saunders returned to civil duties with the N.W.R., India, on which he became Assistant to the Agent. He was appointed Superintendent, Mechanical Workshops, in 1927, having charge of all locomotive, carriage and wagon workshops on that railway. He was invalided home in 1929,



Mr. H. H. Saunders

Joint Managing Director, Vulcan Foundry Limited, 1946-48

Mr. Gerald Collingwood

Appointed Joint Managing Director, Vulcan Foundry Limited

Mr. H. A. Short

Appointed Acting Chief Officer (Docks), Railway Executive

and on return was transferred to the East Indian Railway, where he held charge first of the Lucknow workshops and later the Jamalpur workshops as Deputy Chief Mechanical Engineer. Mr. Saunders was made an O.B.E. (Civil) in 1934 for services in connection with the Bihar earthquake of that year. In 1935 he joined the Vulcan Foundry Limited as Assistant to the Managing Director; in 1941 he was appointed General Manager, and in 1946 was elected to the board and appointed Joint Managing Director.

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Mr. Gerald Collingwood, T.D., M.I.Mech.E., M.I.Loco.E., who, as recorded in our April 2 issue, has been appointed Joint Managing Director of the Vulcan Foundry Limited, was born on August 27, 1902, and was educated at Bradfield College. In 1921 he commenced an apprenticeship with the Vulcan Foundry, and he continued his training on the L.N.E.R., for running shed and footplate experience. In 1925 he was appointed Assistant Mechanical Engineer, South Indian Railway, and was at first employed as Workshop Officer, Negapatam, but shortly afterwards moved to Golden Rock on special duties in connection with the starting up of the new central workshops then nearing completion. During his service with that railway he was for varying periods Acting District Mechanical Engineer, and Acting Deputy Chief Mechanical Engineer (Power). Mr. Collingwood returned home in 1933, and was employed by Rendel, Palmer & Tritton as Inspecting Engineer in the Leeds, Manchester and Glasgow districts, and finally as the firm's Resident Inspector for Newcastle. In 1935 he was appointed by the Vulcan Foundry as Assistant Works Manager. He was called up with the 2/4 Battalion, South Lancashire Regiment (T.A.), in 1939, and later transferred to the R.E.M.E. He was released from active service with the rank of Colonel in September, 1945. Mr. Collingwood returned to the Vulcan Foundry as Assistant to the General Manager, and his services were lent to Robert Stephenson & Hawthorns Limited as Managing Director. In 1947 he was appointed General Manager, Vulcan Foundry, retaining the position of Managing Director of Robert Stephenson & Hawthorns, which he also continues to hold on his new appointment. Mr. Collingwood is a son of the late Sir William Collingwood, who was Managing Director of the Vulcan Foundry from 1912-28.

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Mr. H. A. Short, C.B.E., M.C., M.Inst.T., who has been appointed Acting Chief Officer (Docks) to the Railway Executive, has hitherto been Deputy Traffic Manager, Southern Railway. He entered the service of the London & South Western Railway in 1913, and from the outbreak of war in 1914 until early in 1919 he served with the Suffolk Regiment. Mr. Short was appointed Outdoor General Assistant,

Mr. F. W. Baker

Appointed Regional Treasurer, London Midland Region, British Railways

Mr. A. F. Wigram

Appointed Assistant Signal & Telecommunications Engineer, Scottish Region, British Railways

Mr. R. E. Coward

Appointed Assistant (General), Chief Civil Engineer's Department, Southern Region, British Railways

L.S.W.R. in 1919, and, after serving in various departments of the L.S.W.R. and Southern Railway, was appointed Road Transport Liaison Officer in 1931, representing the company as a Director of several of its associated road companies. In 1941 he became Docks & Marine Manager, having been Assistant Docks & Marine Manager from 1936. During the recent war Mr. Short was chairman of several bodies connected with port affairs, including the Southampton Harbour Board, Docks Committee of the Railway Executive Committee, and the Southampton Port Emergency Committee. He was appointed Deputy Traffic Manager, Southern Railway, in October, 1945. His services were lent by the Southern Railway to the Colonial Office in 1946 to report on the working of the ports of Singapore, Penang, and Port Swettenham. Last year, on the invitation of the Argentine Government, he was lent by the Southern Railway to advise on road, rail, and water transport co-ordination. He is a Member of Council of the Institute of Transport, a former Member of Council of the Chamber of Shipping, and a former Member of the Executive of the Dock & Harbour Association. Mr. Short was awarded the Medal of Freedom (with Silver Palm) by the President of the U.S.A. for work in connection with the American Forces during the war.

Mr. F. W. Baker, who, as recorded in our March 19 issue, has been appointed Regional Treasurer, London Midland Region, British Railways, was educated at Whitgift School, and joined the L.N.W.R. in the Chief Cashier's Office in 1899. He worked in various district cashiers' and pay offices throughout the system, and was promoted Head of Section in the chief office in 1914. He had served with the volunteer and territorial force from 1900, and in 1914 he proceeded overseas with the B.E.F., returning to duty with the railway company at Euston in 1919. Mr. Baker was appointed District Cashier at London Road Station, Manchester, in 1922, but transferred to headquarters consequent on the amalgamation of the railways. He was appointed Senior Head of Section and became Assistant to the Chief Cashier in 1935, and was made Chief Cashier of the L.M.S.R. in 1937.

Mr. A. F. Wigram, A.M.I.E.E., M.I.R.S.E., who, as recorded in our January 9 issue, has been appointed Assistant Signal & Telecommunications Engineer, Scottish Region, British Railways, was educated at the Royal Naval Colleges, Osborne and Dartmouth. He joined the Great Northern Railway in 1920, and served in the Signal Superintendent's Office at Kings Cross and subsequently in the office of the Signal Engineer, Southern Area, L.N.E.R. He was appointed Chief Technical Assistant in 1938, and on the formation of the office of Assistant Chief Engineer (Signals) in 1943 was made Chief Assistant, Signal & Telegraph Headquarters, L.N.E.R. He became Assistant to Engineer (Signals), Scottish Area, L.N.E.R., in September, 1947. Mr. Wigram supervised contract and departmental work in connection with the resignalling of Kings Cross Station in 1932. He was closely associated with the provision of additional running facilities on the G.N., G.C., and G.E. main lines, including remotely-controlled loop lines and colour light signalling, and with automatic signalling installations on the G.E. suburban lines from Liverpool Street to Enfield and Chingford.

Mr. R. E. Coward, O.B.E., A.M.I.Struct.E., who, as recorded in our February 20 issue, has been appointed Assistant (General), Chief Civil Engineer's Department, Southern Region, British Railways, joined the L.B.S.C.R. in the Signal Department in 1915, and in 1917 transferred to the Chief Engineer's drawing office. From January, 1918, to August, 1919, he served in technical branches of the R.N.A.S. and R.A.F. On return to railway service he carried out drawing office duties until, in 1928, he became Assistant Resident Engineer on the construction of the Wimbledon and Sutton railway. In the next year he was made Resident Engineer on various new works, including reconstruction of Pokesdown Station, and construction of the branch line to Allhallows-on-Sea. In 1933 he was placed in charge of the permanent way drawing office of the London East Division, and in 1935 entered the Electrification Section, Chief Engineer's Department, where he was responsible, under the Electrification Assistant, for structural work on various extensions of electrification. In 1939 Mr. Coward was appointed Assistant to Maintenance Engineer. In January, 1940, he was commissioned in the Royal Engineers (Transportation); he served in France, North Africa, and Italy, ultimately becoming Deputy-Director of Transportation (Stores) with the rank of Colonel. For services in North Africa and Italy he was mentioned twice in despatches and awarded the O.B.E. In October, 1945, he resumed duty with the Southern Railway as Assistant Divisional Engineer, Eastern Division, having been appointed to that post in February, 1944, whilst on active service. Mr. Coward was transferred to the London West Division as Assistant Divisional Engineer in January, 1947, and was closely associated with mechanised track blanketing works at Byfleet, Walton, Malden, and Clapham Junction.

Mr. B. W. Livermore has been elected a Director of Keith Blackman Limited, in place of Mr. G. F. Herron, resigned.

In accordance with the terms of the late Lord Hambleden's will, Mr. David Smith has been appointed Governing Director of W. H. Smith & Son Ltd.

We regret to record the death on April 14 of Mr. Percy Wood, formerly Financial Adviser & Chief Accounts Officer, Great Indian Peninsula Railways, who proceeded on retiring leave in 1945.

Dinner to Mr. C. M. Cock

Officers and assistants of the Electrical Engineer's Department, Southern Region, entertained Mr. C. M. Cock, who, until his recent appointment as Chief Electrical Engineer to the Railway Executive, was Chief Electrical Engineer, Southern Railway, to dinner at the Charing Cross Hotel, on April 6, when a presentation was made to him as a memento of his former association with the department. Mr. Cock's health was proposed by Mr. S. B. Warder, Electrical Engineer, Southern Region, supported by Messrs. H. J. Morris, J. B Blake and R. A. Duncan, and others present included:—

Messrs. D. E. Bailey, E. W. Collins, W. E. Capon, H. Bujama, R. W. Bookless, H. V. Ford, J. Goatcher, C. A. Craig, G. A. Hobbins, H. A. Hockley, E. J. Harman, R. Kennaway, H. J. Marchant, A. W. Knight, F. T. Muncey, E. M. Simmonds, W. C. Smith, A. E. Roberts, J. B. Owen, D. W. Wells, W. J. Webb, S. Spooner, W. J. Sykes, J. R. Ward, P. L. Wiggins.

The board of the Suez Canal Company has elected Mr. Francois Charles-Roux to succeed the late Marquis de Vogüe as President.

We regret to record the death on April 16 of Mr. William Baker Neville, J.P., a Member of the London Passenger Transport Board from 1946-47.

Mr. E. S. Shrapnell-Smith has accepted an invitation to rejoin the Henry Spurrier Memorial Committee of the Institute of Transport. He was first Chairman of that committee in 1943-44.

Mr. Robert Foot has been elected President of the Mining Association of Great Britain for the ensuing year.

We regret to record the death on April 9 of Mr. D. N. Pollock, Sales Manager, Heavy Vehicle Department, Scammell Lorries Limited, aged 52.

Sir William Christie has been appointed Secretary of the British Engineers' Association, in succession to Mr. J. W. Thomas, who resigned to become Chief Education & Training Officer of the British Electricity Authority.

We regret to record the death on April 16, in South Africa, of Lt.-Colonel G. J. S. Scovell, C.B.E., Chairman of the Demolition & Construction Co. Ltd.

Mr. S. W. Marsh, until recently a Senior Technical Assistant in the Design Office of the Birmingham Railway Carriage & Wagon Co. Ltd., has been appointed Chief Engineer to the Andre Rubber Co. Ltd.

We regret to record the death, at the age of 67, of Mr. H. A. Dormer, M.I.Mech.E., Chairman of the Sheffield Twist Drill & Steel Co. Ltd.

British Transport Commission

The British Transport Commission announces the following appointments:—

Mr. W. C. Collins, formerly Indoor Assistant to Traffic Manager, Southern Region, British Railways, to be Senior Secretarial Assistant (Traffic Section).

Mr. R. B. Lewis, formerly Private Secretary to the Chief Regional Officer, Western Region, British Railways, to be Senior Secretarial Assistant (Development & Works Section).

Western Region Appointments

The following appointments are announced in the Western Region, British Railways:—

Mr. J. Powell, Assistant District Goods Manager, Paddington, to be Assistant to Commercial Superintendent, Paddington.

Mr. A. E. Flaxman, Assistant District Goods Manager, Birmingham, to be Assistant District Goods Manager, Paddington.

Mr. A. Shoemack, Goods Agent, Smithfield, to be Assistant District Goods Manager, Birmingham.

Mr. A. W. Lort-Williams, District Road Motor Engineer, Birmingham, to be District Road Motor Engineer, Westbourne Park (London).

Mr. J. R. Hammond, Assistant Divisional Engineer, Neath, to be Personal Assistant to Chief Engineer, Paddington.

Mr. F. L. Lambert, Assistant Divisional Engineer, Cardiff, to be Assistant Divisional Engineer, Neath.

Mr. K. H. Tredinnick, Assistant, Divisional Engineer's Office, Bristol, to be Assistant Divisional Engineer, Cardiff.

Ministry of Transport Accident Report

Herne Hill, Southern Railway: November 6, 1947

Lt.-Colonel G. R. S. Wilson inquired into the accident which occurred in dense fog at about 7.34 p.m. at Herne Hill, Southern Railway, on November 6, 1947, when the 4.15 p.m. steam train, Ramsgate to Victoria, passed the up main home signals at "danger," owing to the misreading of the fogman's hand signal, and collided at a diamond crossing with the 6.58 p.m. electric train, Holborn to West Croydon, which was crossing its path under clear signals, and had accelerated to a speed of about 15 m.p.h. The steam train was composed of 8 bogie coaches and 2 special cattle wagons, and was drawn by "U1" class 2-6-0 locomotive No. 1901, with right-hand drive.

The steam train was coasting at about 10 m.p.h., and struck the leading motor coach a few feet behind the driving compartment, the motorman having a fortunate escape. This coach and the next were thrust to the edge of the brick viaduct and wrecked, and the third coach was derailed and severely damaged at its leading end. There were about 100 passengers in the electric train, one of whom was killed. Nine were detained in hospital, all but one being discharged within a week, and 14 others complained of minor injury or shock. There were no casualties in the steam train, and its coaches were practically undamaged.

Emergency services responded promptly, and a fire service detachment arrived within 12 min. despite the fog. Credit is due to all concerned, including station staff, for their efficiency. Their work was undertaken at some personal risk owing to the precarious state of the wreckage, some of which was overhanging the viaduct parapet. Re-railing with heavy cranes was much hampered by the fog and lack of space, but normal working was restored at 3.40 p.m. the following day.

There had been fog all day, and after sunset it had become exceptionally dense in the immediate neighbourhood with visibility restricted to a few feet, but further south conditions were not so bad.

The accompanying diagram gives the facts essential to an understanding of the case. The section is worked by Sykes lock-and-block, the up main plunger at Herne Hill releasing the West Dulwich intermediate home, which is operated from Sydenham Hill. The up main home levers are backlocked to track circuits *B* and *E* or treadle *G*. Trains may be accepted at any time in clear weather, and in fog when fogmen are on duty, at the up homes and distant, as was the case at the time of the accident. The home signal fogman has electric repeater indicators and a telephone to the signal box.

The Course of Events

The signalman at Herne Hill South dealt with an electric train from Sevenoaks on the main line, and then one from Tulse Hill, which arrived at 7.30 p.m. At 7.27 p.m. he accepted the steam train to Victoria, and at once received "entering section." A down train to Ramsgate arrived at about that time and was held waiting "line clear." At 7.30 p.m. the train to West Croydon arrived in the down slow platform, 17 min. late. The down Ramsgate train then went forward, and as the West Croydon train was more behind time than the up train to Victoria, the signalman decided to let it go, set the road to Tulse Hill, and cleared his signals for it. It started at about 7.33 p.m. and the collision followed. As he was sending "obstruction danger" he received a call from the fogman saying the train to Victoria had failed to stop.

The signalman at Sydenham Hill said his distant signal was against the train, which emerged from the Penge Tunnel and passed, without steam, at about 15 m.p.h., as if preparing to stop, but he was able to clear his remaining signals in good time for it. Fog had been patchy all day, but he thought visibility was about 300 yd.

The fogman at Herne Hill South up distant said visibility was 50 to 100 yd. This signal was "on" but the stop arm above it "off," and he thought his yellow hand signal was seen by the enginemen and guard after the detonator had been exploded. He heard no brakes applied and thought the train, though coasting, was going extraordinarily fast through the fog.

The fogman at the Herne Hill homes said fog had continued all day, with visibility 50 yd. About 7 p.m. it became particularly dense. He could see neither arms nor lights, and had to rely on the electric repeaters. He could not recollect what hand signal he showed to the preceding train, but its motorman said it was yellow, which was in accord with the signal indications showing for that train. He said he then put a fresh detonator down and turned his lamp to red, but turned it momentarily to white to inspect the repeaters a little later.

He thought from the sound of the rail joints that the Victoria train approached at about 30 m.p.h., and he showed his hand signal to it. The detonator exploded and the train seemed to slow down, but continued forward at about 20 m.p.h. He ran after it a few yards, blowing his whistle, to attract the attention of the enginemen, neither of whom had he seen, and displayed his red light to the guard, whom he saw at a lowered window, and shouted "Jam your brakes on."

He heard no brake application, possibly because the down Ramsgate train, mentioned above, was passing. He telephoned to the signalman, but learnt that it was too late. When the guard came back to protect the obstruction, he told him that he had shown him a red hand signal. The guard answered that he had seen it and had applied the brake.

This fogman was emphatic that his hand lamp had been correctly at red and appeared to resent the suggestion that he should have made such an elementary mistake as to have had it at yellow. He always verified the colour of the light "for safety" as he knew "what a dangerous job" he was on.

The driver of the Victoria train was an experienced man with a thorough knowledge of the route. His fireman, 19 years of age, had been with him regularly on passenger trains for 12 months, working to Victoria daily every twelfth week. The driver had worked this particular train for the previous three days, and said the weather had been fairly clear as far as Sydenham Hill, the distant for which was against him.

He was expecting to be stopped there, but the signals were "off" and he coasted forward at 20 m.p.h. He ran into thick fog at West Dulwich, but he saw the intermediate signal "off" and Herne Hill distant "on." He heard the detonator, braked and continued at 10 to 15 m.p.h., expecting to be stopped at Herne Hill homes. Visibility then became "nil." He could see neither signals nor fogman, but heard the detonator and asked the fireman what the colour of the hand signal was, and was told "amber." He therefore continued to coast forward. He felt no guard's brake application and the collision took him by surprise.

The fireman's evidence was given in a nervous, hesitating way. He said he knew where to look for the signals, but had never met with fog in the London area, by day or night. He could not remember being on the footplate in fog, at any rate when fogmen were on duty, and seemed to have no clear understanding of the hand signals to be expected at an isolated distant signal. He heard the detonator at West Dulwich and saw the yellow hand signal there, as well as the signals themselves. He maintained that the fogman

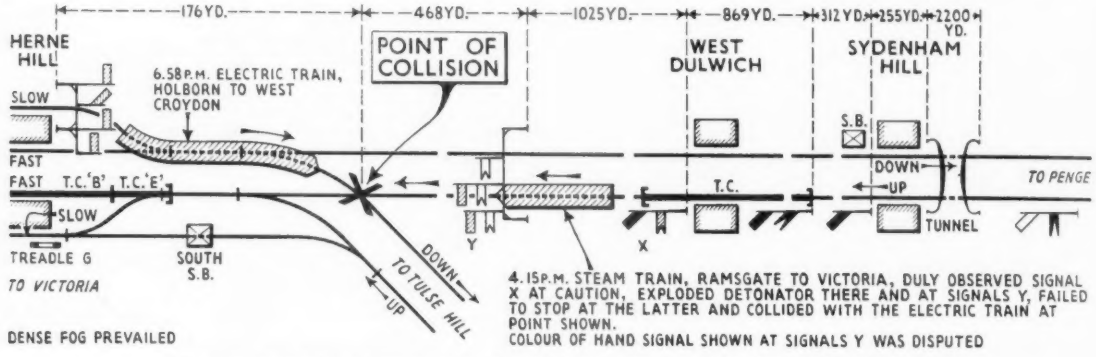


Diagram showing circumstances of collision at Herne Hill, November 6, 1947

at the Herne Hill homes showed an "amber" light, not red, and would not admit the possibility of being mistaken. He informed his driver accordingly and heard no whistle blown, but noise from a passing train might have prevented that. He did not see the fogman himself. (His colour vision had been found normal in November, 1945, and the fogman's in September, 1947.)

The guard had had long experience of the route. His evidence was far from satisfactory. The driver braked, he said, at West Dulwich, and he saw the adverse distant there, but heard no detonator, nor did he hear one at the home signals, though he lowered his near side window. He saw "a red ray" at about footboard level and heard an indistinguishable shout. He told the railway officers that he then assumed the train had passed the signals, so he made a light brake application, reducing the vacuum from 20 to 15 in., keeping hold of the handle and afterwards destroying the vacuum completely.

He felt no severe impact. The train came to rest without knocking over his cup of tea. To Colonel Wilson, however, he would not say definitely that he had seen a red light, though he should have been expecting a hand signal, but continued to refer to a "red ray piercing the fog." He excused himself for failing to apply the brake fully by saying he was "taken unawares" and "confused at the moment." Also, he was afraid a full application would have parted a coupling. Had he seen a red light (as distinct from a red "ray") he would have dropped his handle.

He could not recollect making any comment later when the fogman told him he had shown him a red light, and denied saying that he had seen it.

Inspecting Officer's Conclusion

The Victoria train failed to stop at the home signals, the lights of which were obscured by exceptionally dense fog, and the fog signalling procedure designed to meet such conditions broke down. No responsibility rests on the signalman or the motorman of the West Croydon train. The explosion of the detonator was heard by both enginemen, but there was direct conflict of evidence as to the colour of the hand signal shown by the fogman.

The guard's evidence suggested it was red when he passed it, but Colonel Wilson did not consider his statements to be worth much attention, while there would have been time to change the colour of the light before showing it to him, had an initial mistake been made. It was thus one man's word against another's, but the nature of the evidence tendered to him by the fogman and the fireman coupled with the latter's limited experience, the fact that he had not seen hand signals in fog before, and the possibility that he may have accepted the explosion of a detonator as signifying merely that the distant signal was at "caution," with other circumstances of the case, led Colonel Wilson to conclude that the fogman's evidence should be accepted and that a mistake on the fireman's part was the immediate cause of the collision.

It was the driver's duty, however, to observe fixed or hand signals, as laid down in Rule 127 (xxii), but he may have been taken unawares by a sudden increase in the density of the fog, and was expecting to see the home signals as he had seen the distant. This cannot be regarded as an excuse for his omission to cross the footplate in good time and satisfy himself as to the fogman's hand signal, especially as he knew the fireman to have had little or no experience of working in fog.

His statement that he braked on seeing the distant is accepted, but it is open to doubt whether he approached the home signals as cautiously as he suggested. The detonator there may have taken him unawares and led him to brake momentarily, though he could not remember doing it. He then continued forward on receiving the incorrect assurance that the hand signal was yellow. He does not appear to have been travelling at more than 10 m.p.h. at the moment of collision.

Although not wishing to minimise the difficulties of the circumstances, Colonel Wilson finds himself unable to relieve the driver of serious responsibility. He is 52, with 10 years as driver and a good record.

The guard could have saved the situation, and even if the substance of his account is true, is open to criticism for failing to brake with full force when he assumed the home signals had been passed. His evidence, however, was so unsatisfactory that Colonel Wilson is not convinced that he braked at all, nor that he was sufficiently alert to observe any red light or ray at the fog post, although the fogman appears to have seen him at the lowered window. In any event, it is clear that he failed to rise to the occasion and he must share a considerable measure of responsibility with the driver. He is 59, with 35 years' service, and clear record for over 20 years.

Remarks

It was not disputed that detonators were exploded and heard on the footplate at both distant and home signals, but it appears that the use of a *single* detonator associated with *either* a "caution" *or* a "stop" indication may have had some bearing on the accident, though the driver also failed in his duty to observe hand signals. It is therefore relevant to mention that the fog signalling rules of the Western Region (or former Great Western Railway) require the employment of two detonators to precede a caution indication (or one only where automatic train control is in operation), and three when an outer home is at "danger." There is much to be said for differentiation in this way, which must lessen risk of misunderstanding, and its wider adoption would appear to merit consideration.

It seems doubtful, however, whether warning type A.T.C. would have proved effective, as the distant signal appears to have been observed and the brake applied, though speed was not reduced sufficiently when the fog became really dense. On the other hand, the collision would have been prevented by stop control at the home signal, also probably if the signals had been colour-lights. While there is no immediate likelihood of installing such signals here under present conditions of stringency, the section carries a dense service, and with the prospect of increasing passenger traffic as decentralisation projects in the south-eastern suburbs mature, it presumably will rank high in priority for signalling modernisation, to improve track capacity and safety, as soon as circumstances allow.

The accident is a reminder of the disadvantages of right-hand driven engines in this left-hand running country, where the majority of the signals and fog posts are on the left. Even colour-light signals may lose some value in fog if their aspects cannot be located close to a driver's eye, as usually is practicable with left-hand controls. The Southern Railway standardised left-hand drive for all new construction some years ago, but a considerable number of older engines remains with right-hand controls. Their conversion would not be practicable, but they are being eliminated gradually in the course of obsolescence.

View of the wreckage after the accident at Herne Hill, S.R., on November 6, 1947

SECOND ANNIVERSARY OF GOLDEN ARROW RESTORATION.—April 15 was the second anniversary of the post-war restoration of the Southern Region "Golden Arrow" express. Over 667,000 passengers have travelled between London and Paris by the "Golden Arrow" service during the past two years, including more than 224,000 in the special all-Pullman train. On April 22, to celebrate the anniversary, each lady passenger travelling by the "Golden Arrow" Pullman car train was given a buttonhole, presented at the barrier by two Southern Region women ticket collectors, Mrs. Beatrice Florence Humm and Mrs. Louise Tucker. In addition there were souvenir menu cards on the Pullman train and the ss. *Canterbury*, the original pre-war "Golden Arrow" ship which is operating the service temporarily.

Brush Electrical Engineering Co. Ltd.

The 59th annual general meeting of the Brush Electrical Engineering Co. Ltd. was held at Loughborough on April 20, Sir Ronald W. Matthews, Chairman of the company, presiding.

The Chairman, in a statement issued with the report and accounts, said his forecast at the previous meeting of a profit in 1947 of not less than £300,000 had been more than justified. The 1947 accounts showed a net profit, before providing for depreciation of plant, machinery and buildings, of £463,213. After providing £119,264 for depreciation and deducting adjustments for contracts from previous years amounting to £6,338, the net profit remaining was £337,611. The directors recommended a transfer to general reserve of £250,000, which, after other appropriations and the deduction of the loss brought forward from last year amounting to £49,492, left a credit balance of £17,972 to carry forward.

The Chairman recalled that in 1946 they had made a provision of £130,000 towards estimated modification costs of Ljungstrom turbines. It had been thought desirable to make further provision for 1947 so as to bring the total modification provision up to £150,000, or approximately 50 per cent. of the total cost which would fall on the company in connection with the modification programme. Owing to the non-availability of the necessary materials, their total expenditure in the two years 1948 and 1949 was not likely to exceed £150,000. They believed that during those two years, they would be able to build up the modification provision to the full figure of £300,000 without undue strain on current earnings.

In spite of the Government's reduction in the ordering of generating plant for this country, the company had secured already substantial orders in 1948, which indicated that users were beginning to appreciate that the major modifications incorporated in the design of this turbine would give favourable results and justified their confidence in the company.

The output of the Electrical Division on the basis of the increased production which they were achieving already was booked for more than a year ahead. The Electrical Machine Department also had a full order book for more than a year, strengthened in recent weeks by the receipt of a substantial order for alternators, which was the largest ever booked by the company for an alternator of one size. They also had substantial orders for flameproof motors for mines, production of which would begin this year.

In the diesel-electric traction field, a main-line shunter developed and built by their company had been on extensive test in one of the main railway yards for several months, and so far had given very satisfactory results under working conditions. They had also shipped several similar shunters abroad, and had good reports of their performance.

By the use of special-purpose tools and mass-production methods, they had been able to reduce, by approximately 25 per cent., the cost of engines manufactured under the Petter trade mark. They had produced heavy engines to the extent of no less than 35,000 h.p., which was a record for the company, but one that they believed would be beaten this year.

All necessary steps had been taken to keep machine tools and equipment at Loughborough up to date, further equipment to the value of £72,000 being due for delivery this year or early in 1949. Negotiations for acquiring, on a share-exchange basis, the shares of Mirrlees, Bickerton & Day Limited, and of J. & H. McLaren Limited—two old-established diesel engine manufacturers—were still in progress.

It would be gratifying to stockholders to know that the company began the year with an order book of over £7,000,000 and that results for the first three periods of 1948 showed output 100 per cent. above that for the corresponding periods of 1947, together wtih satisfactory profits. The Chairman, in conclusion, paid a special tribute to the work of the Managing Director, Mr. A. P. Good, in achieving the remarkable change in the fortunes of the company.

The report and accounts were adopted.

North British Locomotive Co. Ltd.

The annual general meeting of the North British Locomotive Co. Ltd. was held recently in Glasgow, Sir Frederick C. Stewart, Chairman of the company, presiding.

The Chairman, in moving the adoption of the report and accounts, said that after providing for depreciation the trading for the year had realised a profit of £255,845, as against £248,513 for the preceding year. Certain appropriations had been made from the year's profits, namely, £131,000 as provision for taxation, and the sum of £60,000 which had been transferred to the reserve fund, bringing the latter to a total of £410,000.

In making their recommendations for payment of dividends, the directors had borne in mind the recent pronouncements of the Chancellor of the Exchequer and other members of the Government. The interim dividend on the preference stock paid in September, 1947, amounted to £10,313, leaving a sum of £105,872, from which the directors proposed payment of the final dividend of 2½ per cent. on the preference stock, and a dividend of 5 per cent. on the ordinary stock, for the year 1947.

He was glad to be able to present a balance-sheet which revealed such a sound financial position, showing as it did an excess of current assets over liabilities of more than £1,500,000.

It might be of interest to stockholders, particularly in view of frequent comment from various sources regarding profits earned and their distribution, to know that in every £ of sales 11s. 2d. was expended on the purchase of raw material and consumable stores, 7s. was paid in wages and insurance to employees, 6½d. to the Revenue in respect of income and profits tax, and depreciation and reserves accounted for 6d. The cost of administration of their company amounted to 6d. in the £ and the payment of dividends represented the small sum of approximately 2¾d.

The Hyde Park and Queen's Park works were occupied fully and locomotives were delivered to railways at home, in Malaya, South Africa, and Brazil. The General Electric Co. Ltd. had agreed to associate itself with their company in the manufacture of electric and diesel-electric locomotives, and orders had been received already for a number of both of these types.

They had been asked by H.M. Government to undertake a very large contract for locomotives for Russia and negotiations were in progress with the Russian Trade Delegation at present. If placed with their company, the order would represent two-and-a-half years' work and considerable expansion to their manufacturing capacity.

A small subsidiary company had been registered in Johannesburg to represent their interests in South Africa. With a full order book and work on hand for some time to come they could look forward to the future with full confidence.

The report and accounts were adopted unanimously.

A New Fabric for Railway Upholstery

A new material suitable for upholstery of railway carriages which the manufacturer, Fothergill & Harvey Limited, of Manchester, states can be woven, like ordinary fabric, in a variety of designs, yet has the wearing qualities of leather, is to be shown at the British Industries Fair (textile section, Earls Court).

The material, which has been registered under the name Tygan, is claimed to be resistant to all kinds of weather, including tropical conditions, unaffected by water or salt water, proof against attack by mildew or fungi, and stainproof, grease marks or other stains being removable by soap and water. Heat is reflected by Tygan, making seats upholstered in it cool in summer and warm in winter; it does not support combustion and is stated to be unaffected by long exposure to hot sun. As the material has a low water absorption it is easily cleaned and is never damp.

The extruded monofilament threads manufactured by B.X. Plastics, Limited, under the name Bexan, from which Tygan is made, can be woven in various styles and designs, and totems and symbols can be interwoven. B.X. Plastics Limited can make the threads in any colour listed in the colour range of the British Standards Institution, and in sizes varying between gauges 0·01 and 0·012. Research is still going on to produce finer threads.

Tygan can be sewn, tacked and handled like other upholstery materials. Its durability is claimed to be such that it would be almost impossible to damage fixtures upholstered in Tygan by slashing with a knife.

A Pullman car seat upholstered in red was shown at a press preview of Tygan by courtesy of British Railways, Southern Region; trimming was by the Laycock Engineering Co. Ltd. Fothergill & Harvey Limited states that in a suitable weight and weave the material will also be available for use in roller blinds, which could be made to match or harmonise with the upholstery of a carriage. Samples of Tygan are now obtainable from the firm at 37, Peter Street, Manchester. It is expected that it will be in commercial production by August of this year, and that peak output will be reached in 1949.

Tygan is the product of several years of research work undertaken in collaboration by B.X. Plastics Limited and Fothergill & Harvey Limited. The latter firm plans eventually to expand the guarantee under which its other products are sold to include Tygan. This system covers degrees of colour fastness, wear, tensile strength, elasticity and other physical properties. The plastic threads are made from British raw materials and the product is expected in consequence to prove a valuable export.

Relation of American Aid to British Industrial Recovery

A warning that any faltering in the effort to expand production and increase exports because aid is to be given under the European Recovery Programme would constitute the sacrifice of our last chance of national recovery, was delivered by Sir Stafford Cripps at a Press conference on April 14. The purpose of American aid was to give participating countries the opportunity to build up their productive resources, so that when the aid ceased, they would again be able to stand on their own feet.

Sir Stafford said that the Economic Survey for 1948 had set production targets for some key industries, and it was opportune to ask what progress had been made. In 1947, mines and open-cast workings produced 196·5 million tons; this year's target was 211 millions, or an increase of 7½ per cent. Output in the fourteen weeks ended April 10 represented a percentage increase of 8 over the corresponding period of last year. Consequently there was little margin of safety, and if production for the year as a whole was to be 7½ per cent. above 1947, weekly output in the last quarter would need to average 4·5 million tons. For the four weeks before Easter the average weekly output was no more than 4·2 million tons.

The steel industry last year cast 12·7 million tons of ingots, and has a 1948 target of 14 million tons. Even this increase, after taking account of imports, would leave the nation short of its requirement of well over 15 million tons in the current year. Thus, it was a matter for satisfaction, though not for complacency, that output in the first quarter was running at an annual rate of 14·9 tons—the highest average for any quarter ever achieved. The attainment of a 14 million ton output for the year as a whole made it necessary to run at a higher level at certain periods, to offset seasonal fluctuations later.

Evidence of greater and more effective effort in various manufacturing industries was provided by the production index for January and by details of output in particular industries in the first weeks of the year. The index, for example, showed manufacturing production to be 23 points higher than the 1946 average, 14 higher than the 1947 average, and 4 points higher than the last quarter of 1947. Among the industries contributing to this result were those manufacturing railway wagons (3,926 in January, compared with a 1947 average of 3,176), internal combustion engines (21,581 compared with 18,549), shell boilers (£496,000 compared with £419,000), industrial valves (£947,000 compared with £795,000), and industrial furnaces (£422,000 compared with £398,000).

Referring to the need to lay the foundations of a prosperous and expanding economy, Sir Stafford said that the rebuilding and re-equipment of industry were a main element, though in the next 12 months only the initial phases of this process would be seen. Meanwhile, full use had to be made of available resources, and managements and workers had to take an entirely new look at their jobs and the way they did them.

Locomotive Shed Masters' Conference

A locomotive shed masters' conference was held from March 31 to April 2 at the St. Ronans Staff Training Centre at Hadley Wood, and is probably the first such conference that has been arranged. The conference was attended by locomotive shed masters and similar grades from the Eastern Section of British Railways, Eastern Region, and was opened by Mr. L. P. Parker, O.B.E., M.I.C.E., M.I.M.E., Locomotive Running Superintendent. At the following six sessions, papers on locomotive subjects were read by technical experts of the Locomotive Running Superintendent's Department, and each was followed by a discussion. The chair at each session was taken by one of the locomotive shed masters, as follows:—

Session 1
In the chair: Mr. V. G. Gilchrist
Papers: "Turnround," by Mr. D. W. Harvey
"Provision of Power," by Mr. L. Theobald

Session 2
In the chair: Mr. F. R. Brown
Paper: "The Staff Angle," by Mr. H. Stopford

Session 3
In the chair: Mr. G. A. Donald
Papers: "Casualties," by Mr. S. M. Smith
"Lubrication," by Mr. W. Morris

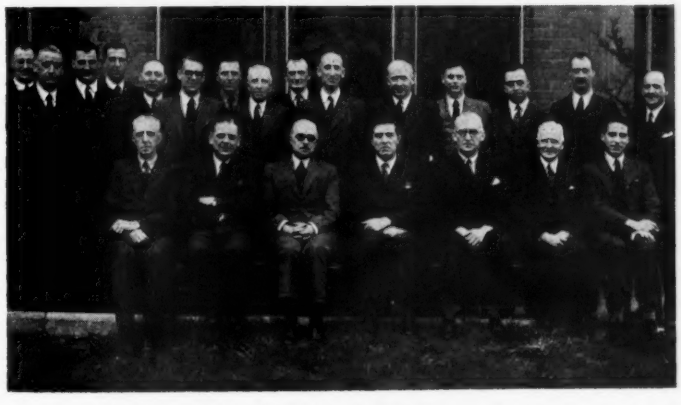
Session 4
In the chair: Mr. W. C. Billing
Paper: "The Planned Servicing System," by Mr. H. R. Gomersall

Session 5
In the chair: Mr. R. H. Jackson
Papers: "Availability," by Mr. G. Ford
"Regular Engines," by Mr. R. Gardiner

Session 6
In the chair: Mr. R. H. N. Hardy
Paper: "Some Recent Developments on the Eastern Section," by Mr. C. H. Hewison

At the closing session, at which Mr. Parker again presided, supported by Messrs. C. K. Bird, Chief Regional Officer, A. R. Dunbar, Operating Superintendent, Eastern Section, and George Dow, Press Relations Officer, the chairmen of the sessions reported on the papers and discussions which had ensued. Mr. Parker gave his comments on various suggestions put forward, and was followed by Mr. C. K. Bird, who devoted most of his remarks to the new organisation under nationalisation.

Eastern Region Locomotive Shed Masters' Conference



A group at St. Ronans, during the British Railways, Eastern Region, Locomotive Shed Masters' Conference

Back row (*left to right*): Messrs. S. J. H. Casselton, H. Stopford, F. J. W. Brown, R. H. N. Hardy, H. R. Billing, W. C. Billing, J. L. Holmes, W. A. Hardy, V. G. Gilchrist, D. W. Harvey, R. D. Gardiner, G. A. Donald, F. C. Tuck, R. P. H. Jackson, S. M. Smith. Front row (*left to right*): Messrs. O. V. Travers, Locomotive Shed Master, Stratford; George Dow, Press Relations Officer, Eastern and North Eastern Regions; L. P. Parker, Locomotive Running Superintendent, Eastern Section, Eastern Region; C. K. Bird, Chief Regional Officer, Eastern Region; A. R. Dunbar, Operating Superintendent, Eastern Section, Eastern Region; A. H. Rees, District Locomotive Superintendent, Cambridge; J. A. Taylor

Questions in Parliament

Hotels Executive

Mr. A. Marlowe (Brighton—C.) on April 19 asked the Minister of Transport on what date the appointment of Lord Inman as Chairman of the Hotels Executive became effective for salary; why no other appointments had yet been made to that Executive; and what functions it had performed to date.

Mr. Alfred Barnes: Lord Inman has been engaged in preliminary work relating to the Hotels Executive since early February. He has asked that no salary should be paid to him before the Executive is set up. The appointment of the remaining members of the Executive is now being considered, and I hope to announce names shortly.

Political Posters on Transport Commission Premises

Major J. A. Boyd-Carpenter (Kingston-on-Thames—C.) on April 12 asked the Minister of Transport whether he would exercise his powers under section 4 (6) of the Transport Act, 1947, in order to ascertain what was the practice of the British Transport Commission as to the display of party political posters on premises occupied by the Commission or by its subordinate executives.

Mr. Alfred Barnes: It was not the practice of the railway companies or of the London Passenger Transport Board to accept posters of a political and controversial nature, apart from those confined to the announcement of meetings, and I have no reason to suppose that the British Transport Commission will not exercise a proper discretion in this matter.

Major Boyd-Carpenter: When the Minister says he has no reason to suppose that the directions will be altered, does that mean that he has relied purely on speculation in answering a Parliamentary question?

Mr. Barnes: This procedure is very well defined in railway administration, and, therefore, as I say, I have no reason to suppose that there will be any change.

Mr. Edward Evans (Lowestoft—Lab.): Is the Minister aware that on several occasions the Metropolitan Line advertised a very warm invitation to join the Tory Party?

Mr. Barnes did not reply.

Notes and News

British Railway Officers' Guild.—The third annual general meeting of members of the British Railways Officers' Guild will be held on May 6 at 2.30 p.m. in the Tudor Room at the New Belle Vue Gardens, Manchester.

Vacancies in South America.—A British railway company operating in Chile and Bolivia has vacancies for an assistant chief engineer, sectional engineers, and a chief draughtsman for the chief engineer's department. See Official Notices on page 503.

London Transport Executive.—General technical assistants fully experienced in process planning, estimating, rate fixing and time study, are required in the department of the Chief Mechanical Engineer (Railways), Acton Works of the London Transport Executive. See Official Notices on page 503.

Birmingham Railway Carriage & Wagon Co. Ltd.—The ordinary dividend for 1947 is 7½ per cent., as in the previous year. Profit for the year, after taxation, was £73,198, as against £88,645. There was a balance available of £159,103, and after payment of dividends, the carry-forward will be £114,925, as against £91,087 brought in.

Traffic Inspector Required.—A traffic inspector, not over 30 years of age, is required by the Government of the Gold Coast for the railway department, for two tours of 18 to 24 months. Candidates must have had practical experience in the traffic department of a British railway and have a thorough knowledge of train working, both passenger and goods. See Official Notices on page 503.

Designing Electrical Engineer Required.—A designing electrical engineer is required by the Commissioner for Railways, Brisbane, Queensland, Australia. Candidates must be capable of designing and supervising the construction of electric lighting and power installations, including overhead and underground construction, and have a sound knowledge and experience of the design and installation of all classes of communication. See Official Notices on page 503.

Collision at Winsford, L.M.R.—Early on April 17, a mail train from Aberdeen to Euston collided with the rear of the 5.40 p.m. passenger express from Glasgow to Euston, which was stationary near Winsford, Cheshire. The passenger train had stopped as a result of the communication cord being pulled. An inquest on the 24 persons killed in the collision was opened at Winsford on April 19, and adjourned until May 6 after formal evidence of identification had been given. The Cheshire police stated at the inquest that a soldier had reported at Winsford police station that it was he who had pulled the communication cord in the passenger train.

Thirty L.M.R. Specials for Cup Final.—More than thirty long-distance special trains have been arranged by the London Midland Region for the F.A. Cup Final between Manchester United and Blackpool at Wembley on Saturday, April 24. Manchester supporters will arrive in London by fourteen special trains (nine to Euston, four to St. Pancras, and one to Kensington); and Blackpool supporters in nine trains (five to Euston, three to Wembley, and one to Kensington). Other trains will be arriving in London throughout Saturday morning, from Birmingham (five), and one each from Liverpool, Sheffield, and Derby and Leicester. These special trains will be arriving at Euston from 2.36 a.m. until 11.12 a.m. on the Saturday. After this, and until 1.22 p.m., they will terminate short of Euston at Wembley Station. In addition to local electric services on the Euston—Watford line, there will be frequent steam trains between Euston and Wembley.

Doncaster Engineering Products.—The Doncaster Engineering Society opened its third exhibition of "Products of Engineering made in Doncaster," on April 17, and the exhibition will close tomorrow, April 24. The Exhibition is being held in the Doncaster Technical College Hall and about eighteen firms are participating, besides the Doncaster Model Engineering Society. The aim is to bring to the notice of the general public the diversity and type of engineering work carried on in the county borough and district. Admission is free and the exhibition is open from 10 a.m. to 9 p.m.

Anglo-Brazilian Trade Talks.—Reuters reports a recent statement by the Brazilian Minister of Finance to the effect that a trade agreement with Great Britain should be signed shortly. Negotiations with British representatives are near completion, and it is understood that one of the main subjects of discussion has been the proportion of the Brazilian trade balances to be allotted to the purchase of railways and utilities. The opinion is held in London that Brazil intends purchasing some of the utilities in the very near future, and leaving sufficient of the sterling balances to provide for the later purchase of others. First priority in the purchases is believed to be the San Paulo Railway. It is understood, further, that separate discussions have been in progress for the purchase of the Leopoldina Railway.

Rebuilding Stonebridge Park Station, L.M.R.—Owing to the rebuilding of Stonebridge Park Station, electric trains on the London Midland Region Euston—Watford line were withdrawn between Willesden and Wembley all day on April 18, and will be cancelled similarly on Sundays, April 25 and May 2 and 9. Trains from Euston and from the Bakerloo Line are turned back at Willesden, and trains from Watford reverse at Wembley. Passengers travelling between Willesden and Wembley, or to and from the intermediate stations (Harlesden and Stonebridge Park) can use a special 15-min. service of steam trains, or buses, on which rail tickets are valid. Since being partly burnt out in September, 1945, Stonebridge Park Station has been repaired temporarily; it is now being rebuilt permanently in modern style, with platforms and buildings made of prefabricated concrete sections. The waiting room will have a glass frontage for the whole of its length.

Summer Continental Services from Harwich.—With the reintroduction on May 1 of limited tourist travel, the Eastern Region of British Railways has arranged improved services from and to Harwich. The Harwich—Hook of Holland night service will run nightly (excluding Sundays) in both directions, leaving London (Liverpool Street) at 8 p.m. and leaving Hook of Holland at 10 p.m.; the day service will run three times weekly in both directions until May 30, after which it will run daily, including Sundays, leaving Liverpool Street at 9.20 a.m., and leaving Hook of Holland at 11.30 a.m. The Harwich—Antwerp service will run on Mondays, Wednesdays, and Fridays in both directions, leaving Liverpool Street at 3 p.m. and leaving Antwerp at 4 p.m. The Harwich—Esbjerg service will run three times weekly in both directions until June 6, thereafter being increased to five sailings a week in both directions.

Railway Steamship Exchanges.—The steamship *St. Andrew*, until recently operating on the Western Region Irish service, was transferred to the Eastern Region Harwich-Hook of Holland service on April 12. In future, ships of the British Railways fleet are to be used on any suitable railway-operated sea routes, and not confined to those of their own regions.

Mersey Railway Dividends.—At a meeting of the board of the Mersey Railway Company held on April 7, it was resolved to pay the full dividend of 3 per cent. on the perpetual preference stock, less income tax at 9s. in the £ for the year ended December 31, 1947; and to pay a final dividend on the consolidated ordinary stock of 2¼ per cent., less income tax at 9s. in the £ for the year ended December 31, 1947. The dividend on the ordinary stock for 1946 was 2⅛ per cent.

Diesel Engine Users Association.—The Diesel Engine Users Association is now in its 36th year, and at the annual luncheon last week Sir Harry Ricardo spoke of the useful work which the Association had performed during that time. The fact that the Association now numbers among its members manufacturers of diesel equipment enables it to act as a useful link between the suppliers of the machinery and the users of it with benefit to both parties. Mr. William Howes, President of the Association, pointed out that the real object of the Association was to achieve conditions under which the members could enjoy peace of mind. The bringing together of makers and designers with actual users should do much to help in the achievement of the Association's objective. The reports on working costs which have been prepared for some years under the ægis of the Association have proved of considerable interest and value to users of diesel engines. The President paid tribute to Mr. Clifford Green for the valuable work he had done in this connection and for making it possible to continue the compilation of these reports during the war.

Holyhead Harbour and Caledonian Canal.—The British Transport Commission, with the consent of the Minister of Transport pursuant to paragraph 7 of a Scheme of Delegation to the Railway Executive made by it on November 22, 1947, and approved by the Minister on November 25, has issued an Instrument (No. R/EX/1) delegating to the Railway Executive all the rights, powers and liabilities in respect of Holyhead Harbour which vested in the Commission by virtue of section 69 of the Transport Act, 1947, and the Caledonian & Crinan Canals & Holyhead Harbour (Date of Transfer) Order, 1948, and applying to such delegation the provisions of paragraphs 4 and 5 of the Scheme. The Commission, with the consent of the Minister pursuant to paragraph 7 of a Scheme of Delegation to the Docks & Inland Waterways Executive made on December 23 and approved by the Minister on December 24, has also issued an instrument (No. D. & I.W./EX/1) delegating to that Executive all the rights, powers and liabilities in respect of the Caledonian Canal which vested in the

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

Australia

QUEENSLAND GOVERNMENT RAILWAYS

POSITION VACANT

APPLICATIONS will be received by the undersigned until May 22, 1948, for the position of Designing Electrical Engineer in the service of the Commissioner for Railways, Brisbane, Queensland, Australia.

Present salary range £578 to £703 (Australian currency) per annum.

Must hold Degree in Electrical Engineering from a recognised University, or other equivalent qualification.

Must be capable of designing and supervising the construction of electric lighting and power installations, including overhead and underground construction and have a sound knowledge and experience of the design and installation of all classes of communication.

Applicants should furnish full details of qualifications and experience.

The appointment may be made at any commencing salary within the range stated according to qualifications and experience.

Particulars required to be furnished by applicants and conditions of employment will be supplied on application to the undersigned.

L. H. PIKE,
Agent-General for Queensland,
Australia,
409-410, Strand,
London, W.C.2

FOR SALE.—Saddle-tank Shunting Locomotive, 0-4-0 type, in good working order. Standard gauge. Working pressure 140 lb. per sq. in. Weight in working order about 24 tons. Seen by appointment at MESSRS. HUNTLEY & PALMERS LIMITED, Reading.

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

TRAFFIC INSPECTOR required by Government of Gold Coast for Railway Department for two tours of 18 to 24 months. Salary £450, rising to £600 a year, plus overseas pay £150 or £200 a year. Commencing salary according to age and war service. Outfit allowance £60. Free passages and liberal leave on full salary. Candidates, not over 30, must have had practical experience in the Traffic Department of a British Railway, and possess a thorough knowledge of train working, both passenger and goods (operating and commercial), railway signalling on both single and double lines, small station working and accounts. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London S.W.1, quoting M/N/23591 (3E) on both letter and envelope.

No. 499936. "Improvements in Railway Trucks."
No. 499710. "Improvements in Railway Trucks."

THE owners of the above patents are desirous of arranging by licence or otherwise, on reasonable terms, for the manufacture and commercial development of the inventions. For particulars address in the first instance to HERBERT HADDAN & Co., 31 & 32, Bedford Street, Strand, London, W.C.2.

RAILWAY AMALGAMATION IN GREAT BRITAIN. By W. E. Simnett. An authoritative account of the course of railway amalgamation in Great Britain up to the end of 1923. Cloth. 8¼ in. by 5¼ in. 276 pp. 15*s*. *By post* 15*s*. 7*d*.

RAILWAYS AND NATIONALISATION. By E. A. Pratt. A book for those who wish to study the question from the point of view of practical politics. Cloth. 7½ in. by 5¼ in. 454 pp. 2*s*. *By post* 2*s*. 10*d*.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth, 8¼ in. by 5¼ in. 82 pp. Diagrams. 5*s*. *By post* 5*s*. 3*d*.

LONDON TRANSPORT EXECUTIVE. Vacancies exist for General Technical Assistants fully experienced in Process Planning, Estimating, Rate-fixing and Time Study in the Department of the Chief Mechanical Engineer (Railways), Acton Works. Applicants should have had a sound general education and technical education to National Certificate standard. Specialised experience in one or more of the following categories, preferably as applied to the repair and overhaul of railway rolling stock, is essential:—

(*a*) General machine shop work.
(*b*) Wood machining and assembly.
(*c*) Electrical equipment and traction motors.
(*d*) General mechanical engineering.
(*e*) Coach building and finishing.

The salary range for the posts is up to £480 p.a., according to age and qualifications. The successful candidate will be required to pass a medical examination. Canvassing directly or indirectly will disqualify a candidate.

Applications giving full particulars of age, experience and qualifications should be sent to the STAFF OFFICER (F/EV.2), LONDON TRANSPORT EXECUTIVE, 55, Broadway, S.W.1, so as to be received not later than May 15, 1948.

For acknowledgment enclose addressed envelope.

BRITISH Railway Company, operating Chile and Bolivia, requires:—

Assistant Chief Engineer. Qualifications—Chartered Civil Engineer, good experience in track maintenance, construction and bridging, held Railway administrative or supervisory post. Salary £1,000, rising to £1,300 p.a.

Sectional Engineers. Experienced in track maintenance and construction of Railways and Structures. Salary £750, rising to £950 p.a.

Chief Draughtsman for Chief Engineer's Department. Railway experience essential. Salary £750, rising to £950 p.a.

Free quarters, allowances, passages, etc., provided. Write with full details of qualifications and experience to Box 2210, c/o CHARLES BARKER & SONS LTD., 31, Budge Row, London, E.C.4.

ALUMINIUM: Capacity available for gravity and pressure die casting. Large modern plant.—Box DX360, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Commission by virtue of section 28 of the above Act and the above Order, and applying to such delegation the provisions of paragraphs 4 and 5 of the Scheme. Copies of each Instrument may be obtained from the office of the British Transport Commission, 55, Broadway, Westminster, London, S.W.1, price 6d. in each case.

Oerlikon Change of Title.—As from April 1 the name of Oerlikon (Reconstructed) Limited, of Victoria House, Southampton Row, London, W.C.1, has been changed to Oerlikon Limited. In all other respects this electrical engineering and contracting firm remains unaltered.

U.S.A. Railways Apply for Higher Fares.—The Eastern Railroads of the U.S.A. applied to the Interstate Commerce Committee on April 7 for authority to increase their passenger rates by approximately half a cent per mile. The companies cited "unprecedented passenger service losses" due to the sharp cost increase in wages, materials, and supplies. The commission was told, Reuters reports, that "on an annual basis the petitioners' operating costs had been increased by at least $400 million since the present fares were authorised by the commission in the Spring of 1947."

Renumbering Former L.M.S.R. Locomotives.—As a general rule, the numbers of locomotives of the London Midland Region and those in Scotland of L.M.S.R. origin will be increased by 40000 (see also our April 2 issue). Those formerly numbered above 20000, however, will be entirely renumbered into a new 58000 series, in which will be included also the Class "1P" ex-Midland 0-4-4 tanks, hitherto Nos. 1239-1430; the ex-Midland Class "2F" 0-6-0s, hitherto Nos. 2987-2999, 3023-3134, and those between 3137 and 3833 which have been numbered previously with the Class "3F" series; and the ex-L.N.W.R. Class "2F" 0-6-2 tanks with previous numbers between 7692 and 7840. All steam locomotives will fall into the number group 40000-59999. A special series of numbers has been allotted to each type of diesel-electric, diesel-mechanical, and petrol-driven locomotive.

U.S.A. Coal-Burning Services Back to Normal.—The restrictions on railway goods and passenger services imposed in consequence of the recent strike of soft-coal workers (see our April 9 and 16 issues) were removed on April 14.

Return of Wagons to Germany.—It was reported to the recent meeting in Geneva of the Inland Transport Committee of the Economic Commission for Europe that by March 12 last, the number of wagons owing to the British and United States zones of Germany had been reduced by approximately 50 per cent. since November 14 last year.

Southern Region Dramatic Society.—At least 55,000 persons have seen performances by the Southern Region Dramatic Society, which has 180 shows to its credit, as well as money collected for charities. The Society has the distinction that it did not close down during the war and toured continuously during these years to hospitals and troop centres; the Society's next show is at the Scala Theatre on Tuesday, April 27, at 6.45 p.m.

L.M.R. Ambulance Final.—The nine ambulance teams in British Railways, London Midland Region, which have been successful in the eliminating rounds, are meeting in the Region's final ambulance competition at Belle Vue, Manchester, today, April 23. The teams are: Camden "A," Wolverton (Bucks.), Blackburn, Castlethorpe (Bucks.), Nuneaton, Derby Boiler Shop "B," Bolton Locomotive, Peterborough, and Horwich (Lancs.) Machine Shop. The presentation of a challenge shield and other prizes by Mr. W. P. Allen, Member, Railway Executive, is being attended by Mr. G. L. Darbyshire, Chief Regional Officer, and Mr. H. J. Comber, Chief Officer for Labour & Establishment, London Midland Region.

Studying Uruguay Railways Share-Out Proposals.—Schemes for the allocation among stockholders of proceeds from the sale of the British-owned railways in Uruguay will be submitted to an independent panel for consideration before going before the holders themselves for approval. In this way, the directors of the companies concerned consider, stockholders will have the benefit of an independent view of the proposals. The panel will consist of Sir David Maxwell-Fyfe and Mr. Gilbert D. Shepherd, President of the Institute of Chartered Accountants. Signing of the sale agreement with the Uruguay Government was reported in our issue of March 12.

North British and Deuchars Ambulance Challenge Cups.—At the headquarters of the St. Andrew's Ambulance Association at Glasgow recently, eight railway ambulance teams which had previously qualified in eliminating examinations were in competition for the North British Challenge Cup and the Deuchars Cup, the custody of which is contested annually throughout that portion of British Railways in Scotland which was formerly part of the L.N.E.R. The former cup, inaugurated in 1895, is awarded for the highest all-round proficiency, and the latter presented by the family of the late Mr. David Deuchars (Superintendent of the Line, North British Railway, 1893-1911), is gained for the highest marks in the practical section of the competition. On this occasion the general standard was high. The awards were made by Mr. T. H. Moffat, Deputy Regional Officer, Scottish Region, British

Railways. The team from Kipps Carriage & Wagon Sheds, Coatbridge, gaining 251½ marks, secured both trophies, and the runners-up were Edinburgh Waverley No. 1, with 249½. Glasgow Queen Street obtained third place with 244½.

Summer Time in Ireland.—On Sunday, April 18, summer time was introduced in Eire, and thus time was synchronised in Eire and Northern Ireland. This involved the re-issue of Great Northern Railway timetables crossing the border.

Official Coaches for Princess Elizabeth.—On page 494 of this issue are reproduced four photographs of two railway coaches which H.R.H. Princess Elizabeth will use on official journeys. As reported in our March 19 issue, on page 362, her personal coach, numbered M45005, was used by Mr. Churchill during the war as a travelling H.Q. Both coaches, which were inspected by the Princess at the L.M.R. carriage and wagon works at Wolverton some weeks ago, are painted in bright maroon, with a double line of gold leaf divided by a black line, and each contains four bedrooms, a bathroom, a lounge, and a dining room.

Tourist-Voucher Scheme and Petrol Concession.—Special arrangements have been made for tourists to purchase clothing and other rationed goods for their use in this country, by means of a tourist voucher book; the arrangement will supplement the previous personal export scheme, under which goods may not be handed or delivered to a customer in this country. The new voucher scheme will be available from May 1, to any visitor holding a non-United Kingdom passport, other than German, Austrian, or Japanese, who encashes not less than £25 in foreign currency with a bank in this country, or a similar sterling amount derived from an appropriate account. New arrangements also have been made for visitors' petrol allowances, providing for the journey to their furthest destination and thence to their port of departure, together with a touring allowance of 600 miles for under 14 days, 800 miles for 15 to 21 days, and 1,000 miles for over 21 days and up to one calendar month.

Eastern Region Locomotive Exchanges.—The programme of test runs by other regions' locomotives on Eastern Region services, and of Eastern Region locomotives on other regions, began on April 19, when the 1.10 p.m. express from Kings Cross to Leeds was hauled by a L.M.R. "6P" class locomotive, which worked on this train and the 7.50 a.m. up from Leeds until April 22. These runs were of a preliminary nature, the actual tests with this locomotive being scheduled on the same trains from April 27 to 30. From April 26 to 29 preliminary runs will be made on these trains by a L.M.R. "Duchess" class locomotive. An Eastern Region "A4" Pacific will run between Paddington and Plymouth on the 1.30 p.m. down and 8.30 a.m. up Paddington—Plymouth trains from April 26 to 29, in preparation for test runs from May 4 to 7.

Forthcoming Meetings

April 23 (*Fri.*).—The Institute of Transport, Metropolitan Section, Surrey Group, at F. Ayers & Sons, 90, High Street, Guildford, at 7 p.m. Inaugural meeting and short address on "Transport," by Mr. D. R. Lamb, M.Inst.T.

April 27-30 (*Tues.-Fri.*).—The Institute of Welding, annual Spring meeting, at Manchester.

Railway Stock Market

The Italian election benefited stock market sentiment, the volume of business improving in British Funds and also in industrials, which were helped by another batch of important company results. In many cases earnings have increased, but dividends are limited to last year's rates in accordance with the general agreement, larger amounts being added to reserves. Nevertheless, it is not overlooked that building up of reserves is to the ultimate benefit of shareholders; and, moreover, it is being pointed out in the market that if the export drive makes reasonable progress this year, voluntary dividend limitation may be lifted in 1949.

The rally in British Funds, which developed towards the end of last week, arose in a large measure from Sir Stafford Cripps' reference to the gilt-edged market and his remark that prices no doubt would improve in due course. This brought in moderate buying and values were quickly marked up all round. Nevertheless, the City feels that the special levy on investment income is bound to leave its mark on markets. It continues to be assumed that selling will be in evidence from time to time in order to pay the special levy, and that there will be a tendency to switch into higher-yielding stocks and shares.

On the other hand, the large amount of money awaiting investment will be increased further during the next few weeks, and a good proportion of this seems likely to go into British Funds. British Transport 3 per cent. (1978-88) has rallied well to 95¼, and Transport 3 per cent. (1967-72) recovered to 96½.

Earlier activity in Brazilian rails and utility shares has been followed by a minor reaction, although, pending news of the terms of the Anglo-Brazil trade and financial agreement, a good deal of speculative interest continued to be shown in these securities. The market is assuming that even if the agreement does not specify companies likely to be the subject of take-over developments, the way will be opened for negotiations with this end in view. In any case it is assumed that there must shortly be official news as to when the San Paulo Railway is to receive the purchase money for the undertaking, which is so long overdue. San Paulo stock has risen further to 185 on the view that the purchase money and a payment agreement in respect of ancillary assets may justify a price for the stock of nearer 200 than the present level.

Leopoldina was 15¼, the preference stock 44½, and the 4 per cent. debentures 74½. Leopoldina Terminal debentures were 69, and Great Western of Brazil £10 shares changed hands around 75s. Manila Railway "A" debentures were at 100, but the preference shares fluctuated and receded to 11s. Better demand was in evidence for Antofagasta preference, which firmed up to 67, with the ordinary stock 12¾. United of Havana 1906 debentures improved to 17½. Uruguay railway stocks have been firm on formation of the panel to settle the share-out claims of the various classes of stocks of companies involved in the sale to the Uruguayan Government. Central Uruguay ordinary was 15¼, and the second debentures 83.

Canadian Pacifics were 19⅞. Beira Railway bearer shares strengthened to 55s. 7½d. Argentine rails attracted little business. A jump to 33 in La Guaira & Caracas stock was attributed to vague talk of take-over developments and estimates of break-up value.

Road transport shares have been firm, with those of the operating companies continuing to attract attention on their investment merits and the assumption that in most cases current market prices are probably below a fair compensation level in the event of negotiations with the British Transport Commission. Iron and steels have been quite well maintained at the time of writing, with Stewarts and Lloyds 55s. 10½d. awaiting the financial results.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1945/46	No. of Week	Aggregate traffics to date: Total 1947/8	Aggregate traffics to date: Increase or decrease
				£	£		£	£
South & Central America	Antofagasta ...	834	11.4.48	48,990	+ 8,550	15	764,930	+ 207,610
	Bolivar	174	Mar., 1948	$107,937	— $3,698	13	$294,242	— $46,070
	Brazil	—	—	—	—	—	—	—
	Cent. Uruguay ...	970	10.4.48	44,745	+ 10,805	41	1,443,074	— 77,100
	Costa Rica	262	Feb., 1948	29,822	— 208	35	266,961	+ 46,589
	Dorada	70	Feb., 1948	16,700	— 12,900	9	39,800	— 20,500
	G.W. of Brazil ...	1,030	10.4.48	34,200	— 300	15	565,600	+ 6,800
	Inter. Ctl. Amer. ...	794	Feb., 1948	$1,144,611	— $ 1,242	9	$2,402,164	+ $74,903
	La Guaira	22¾	Mar., 1948	$123,329	— $6,679	14	$291,639	— $63,436
	Leopoldina	1,918	10.4.48	55,942	— 12,561	15	797,931	— 148,919
	Midland Uruguay ...	319	Feb., 1948	16,405	+ 8,378	35	143,912	+ 10,100
	Nitrate	382	15.4.48	13,338	+ 3,869	16	86,329	+ 27,534
	N.W. of Uruguay ...	113	Feb., 1948	5,261	+ 1,916	35	40,635	— 3,127
	Paraguay Cent. ...	274	9.4.48	₲70,565	+ ₲8,511	41	₲2,698,377	+ ₲106,609
	Peru Corp.	1,059	Mar., 1948	168,201	+ 13,122	39	1,527,280	+ 170,666
	Salvador	100	Jan., 1948	c350,000	+ c85,000	30	c1,072,600	+ c187,600
	San Paulo	153¼	—	—	—	—	—	—
	Taltal	156	Mar., 1948	11,805	+ 8,880	39	70,410	+ 32,780
	United of Havana ...	1,301	10.4.48	111,184	— 2,786	41	2,963,428	+ 404,941
	Uruguay Northern	73	Feb., 1948	1,261	+ 481	35	9,057	— 965
Canada	Canadian National ...	23,535	Feb., 1948	8,504,250	+ 737,250	9	17,004,750	+ 1,023,250
	Canadian Pacific ...	17,037	Feb., 1948	6,071,500	+ 812,750	9	12,303,000	+ 1,204,500
Various	Barsi Light†	202	Mar., 1948	25,432	— 1,455	52	295,800	+ 23,370
	Beira	204	Jan., 1947	116,310	+ 29,791	16	469,223	+ 113,551
	Egyptian Delta ...	607	20.3.48	18,195	+ 1,076	51	608,291	— 45,846
	Gold Coast	536	Dec., 1947	204,032	— 8,365	39	1,392,691	— 230,301
	Manila	—	—	—	—	—	—	—
	Mid. of W. Australia	277	Feb., 1948	21,855	+ 5,112	35	184,383	+ 48,562
	Nigeria	1,900	Jan., 1948	521,787	+ 59,708	44	3,899,303	— 20,011
	Rhodesia	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	+ 612,938
	South African ...	13,323	20.3.48	1,273,200	+ 107,324	51	64,406,722	+ 5,430,550
	Victoria	4,774	Dec., 1947	1,450,410	+ 164,100	26	—	—

† Receipts are calculated @ 1s. 6d. to the rupee